DR. CASPARI'S
HOMŒOPATHIC
DOMESTIC PHYSICIAN,

EDITED BY

F. HARTMANN, M. D.,

AUTHOR OF THE "ACUTE AND CHRONIC DISEASES" IN FOUR VOLUMES.

TRANSLATED FROM THE

EIGHTH GERMAN EDITION, AND ENRICHED BY A TREATISE ON

ANATOMY AND PHYSIOLOGY,

BY

W. P. ESREY, M. D.

WITH ADDITIONS AND A PREFACE

BY

C. HERING, M. D.

CONTAINING ALSO

A CHAPTER ON MESMERISM AND MAGNETISM; DIRECTIONS TO ENABLE PATIENTS LIVING AT A DISTANCE FROM A HOMŒOPATHIC PHYSICIAN, TO DESCRIBE THEIR SYMPTOMS;

A

TABULAR INDEX OF THE MEDICINES AND THE DISEASES

IN WHICH THEY ARE USED; AND

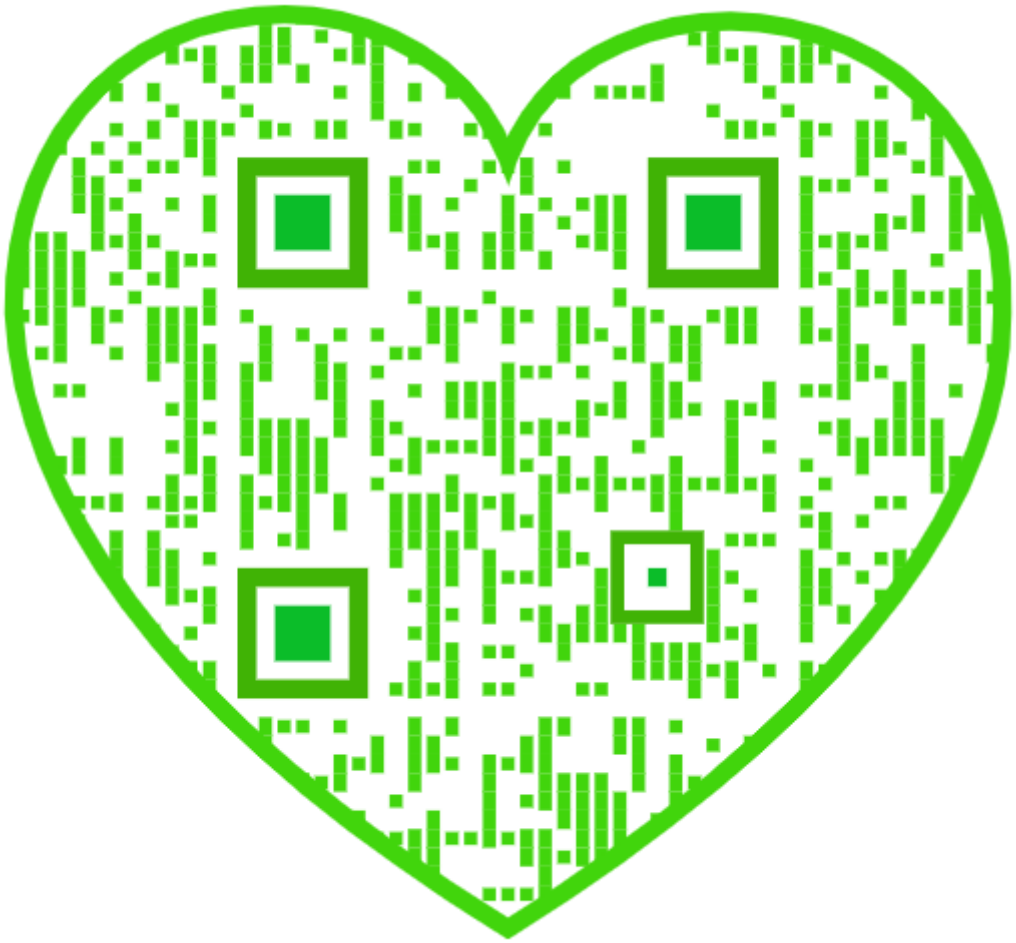
A SKETCH OF THE BIOGRAPHY OF SAMUEL HAHNEMANN,

THE FOUNDER OF HOMŒOPATHY.

LIBRARY
SURGEON GENERAL'S OFFICE
AUG 10 1898
163061.

With 30 Illustrations.

PHILADELPHIA:
PUBLISHED BY RADEMACHER & SHEEK, No. 239 ARCH ST.
NEW YORK: WM. RADDE, 322 BROADWAY.
ST. LOUIS: J. G. WESSELHŒFT, 64 FOURTH STREET.
BOSTON: OTIS CLAPP, 23 SCHOOL ST.
1852.



ANNEX

Annex
WBK
C342h
1852
c.1

Entered according to the Act of Congress, in the year 1851,
By RADEMACHER & SHEEK,
In the Clerk's Office of the Eastern District of Pennsylvania.

KING & BAIRD, Printers, No. 9 Sansom St., Philadelphia.

PREFACE.

THE translator and the publishers of the following short adviser for the people have asked me to endorse it, as neither Caspari nor Hartmann are much known in this country, except to homœopathic physicians. And I do it with the more pleasure as I am myself a competitor in this branch of our literature. I have been acquainted with both authors, and was even present when Caspari first spoke of his plan to write a small practical book for every body, in order to assist the friends of our cause when travelling, or so situated as to be unable to procure the advice of a homœopathic physician, as well as to introduce the new healing art into those families who were *afraid* to call a homœopathic physician. This was a few years after I had joined the ranks of the homœopathists —25 years ago—and Caspari had to make his book very small, in order to find at that time—1826—a publisher. After its publication three years elapsed before the comparatively small edition was sold. In 1829 a new edition was wanted, and Caspari having died previously, Dr. Hartmann undertook to make the necessary additions and improvements. It could not have fallen into better hands, as Dr. Hartmann was one of the earliest disciples of Hahnemann, and a man of more experience and practical knowledge than Caspari.

The criticism of this second edition by Dr. Stapf in the Archives, Vol. 8, No. 3, page 183, not only acknowledged the greater ability of Hartmann, but at the same time urged him to write a larger work on Therapeutics, saying that "Hartmann is from his practical experience not only able, but is peculiarly fitted for it."

Thus urged, Hartmann was induced to forward the first therapeutical work ever published on homœopathy.

In 1831 the first volume appeared, in 1832 the second, and in 1834 a new edition was required, which, being a larger one, lasted until 1847, when a third edition appeared very much enlarged and improved.*

During the same period Hartmann became one of the editors of the "Homœopathic Gazette," a publication commenced in 1833 and is now in its 42d volume. It is unnecessary to add a single word to recommend an author to the American public after such facts. And to recommend the work itself, nothing more is required than the fact that from the year 1829 to the present time it has gone through eight editions, and is so much improved and enlarged as to have become more the work of Hartmann than of the original author. Each successive edition has also been heavier, and there are at present not less than from 15 to 20 thousand copies of this work in the hands of the German people, nothwithstanding the simultaneous appearance of more than a dozen of similar domestic books from different authors. May we soon be enabled to say the same of the American translation. Every traveller ought to have it in his trunk. More than one-half of the acute diseases are either brought on, or prolonged by injudicious treatment, at the commencement especially, with purgatives. Thus nearly all of the diseases by which the traveller is liable to be attacked, may be speedily arrested by complying with the rules here laid down, and that without any of the vexatious interruptions, which the allopathic pureficatory drugs necessarily produce.

And for family use it will also be found well adapted, being short, concise and yet complete; for those who want but a brief adviser there is no better work.

C. Hering.

Philadelphia, Oct. 18, 1851.

* Acute and Chronic Diseases.

INTRODUCTION.

It would be superfluous to add to the great number of publications of this kind, were I not in hopes, by presenting this, to diminish their copiousness, and restrain their influence on the health of the community. All those works are allopathically drawn up, and as there is a proportionate quantity of medicines to each method prescribed, injurious and dangerous though they are even in the hands of the physician; how much more so must they be in the hand of the unskilled, who know not in one instance, how to meet the harm? There are found in the manifold "Domestic Physicians", "Household Friends", and similar books for the people, descriptions of diseases, the most important and hazardous to life, which have never been successfully treated even by physicians; with what right, then, are they entrusted to the ignorant, who are in no respect qualified to know their whole compass, and to judge of their endless modifications? Will they not often, without foreseeing the imminent danger, when trusting to the medicine recommended, suffer the most suitable time for removing a disease to pass by, and thus render it more incurable; will they not frequently, deceived by imperfect views, administer quite unsuitable means, where a superficial resemblance of one case to another, appears to call for them and thereby occasion harm?

To obviate this, I present to the public in the introduction a way by which, in conformity with the rules of homœopathy, aid may be obtained in diseases, in a manner altogether free of danger.

Moreover I hope, herewith to contribute towards the extension of a better, more natural manner of living; by showing, that with apparently insignificant substances, usually deemed articles of

diet, such as coffee, chamomile, elderblossoms, &c., not only many disorders may be remedied, by refraining from their too free use, but that by these very medicinal articles, if used as food, a host of diseases may be produced; besides that in the treatment of diseases, a far more careful mode of living must be observed, than is commonly the case, and finally that such regular mode of life, is the best preservative against diseases.

The operation and efficacy of homœopathic medicines is sufficiently known, so that there is no necessity for me to add anything on that head, except that their harmlessness lies in their minuteness, by virtue of which, if the layman has made a wrong selection, it at least does no injury, and can easily be neutralised. Nothing in nature is unconditionally poisonous, that is, places the life of any creature in any permanent danger, but even the most powerful article, provided its quantity of poison be duly lessened, becomes the most beneficial means of cure. Though there are many plants, on which animals do not feed, this is no evidence that they are poisonous, for they would indeed be hurtful to them as food, if taken in very small quantity would do them no harm; and it would be quite erroneous to conclude from this, as to their uselessness when taken as medicine. It is only an indication, that we must use them as such with great caution, and in most minute quantity. Thus the Pulsatilla is rejected by animals, but it is, when used cautiously by man, one of the most indispensable and beneficial medicines.

But who ever wishes to use medicines, and especially homœopathic medicines, with good results, must observe the most careful diet, that is, he must avoid every thing that can retard the operation of the medicine, or change or nullify it.

Before proceeding further, there are perhaps many of my readers, who are indebted to homœopathy, and on this account, would willingly occupy themselves with it at their leisure, and delight in knowing something of its history, founder, progress, &c., (which I at this time deem necessary, since homœopathy has continually been spreading itself abroad,) whereby the well diposed reader may become acquainted with the author

of this new system of cure, who has long been known only by name, and may now scientifically approach somewhat nearer to him, and learn, and from this more intimate acquaintance, may be enabled to make this just inference: that *Hahnemann*, by virtue of his eminent qualifications, must have been fully competent for the gigantic work of revolutionizing the practical part of medicine.

SKETCH

OF THE BIOGRAPHY OF HAHNEMANN,

THE FOUNDER OF HOMŒOPATHY.

Samuel Christian Frederick Hahnemann, Doctor of Medicine and Surgery, ducal aulic counsellor of Anhalt-Köthen, was born on the 10th of April 1755 at Meissen in Saxony. His mother communicated to him when a boy the rudiments of reading and writing; almost as in play he acquired with and from his father the most circumspect cultivation of his mind, especially by being industriously taught to think for himself, and he uniformly so directed his genius, that the son never ventured to assume a thing to be right and true, of which he had not been convinced by some proof. From this foundation the father sedulously required him to learn geometry and spontaneous designing, in order to become acquainted with the relations of things, even physically, so as clearly and distinctly to judge of them. His father also encouraged him in all by his own virtuous, steady, and energetic example.

For several years *Hahnemann* attended the public schools of that place, and there very soon showed a quick capacity, persevering industry, and an innate aptitude for intellectual activity; his manifold talents were more fully developed in the royal school at Meissen, which he frequented from his eighth year, and where, by his extraordinary assiduity, he gained the notice and love of *Müller*, at that time rector; whom in his later years he often remembered and acknowledged with much gratitude, in

as much as he had allowed him liberty in the choice of his studies, essential to the enriching and perfecting of his knowledge. Frequently the rector transferred to *Hahnemann* the hours of study of the younger scholars in the elements of the Greek language, as he generally placed such confidence in the matured judgment and deliberate thought of his pupil, that he took pleasure in disputing with him on the old languages, and often adopted young *Hahnemann's* views. The love of the rector (who, by labouring night and day, brought on a wasting disease, which also gave him the impulse to study medicine) for him went so far, that he dispensed with those studies, of which *Hahnemann* was not particularly fond, and allowed him, in the mean time to employ himself with natural science and medicine, to which he felt himself particularly drawn. He was not less beloved and respected by the rest of the teachers, which is saying much; he knew also, notwithstanding oft received praise, how by his friendly and affable deportment, to secure the love of his school fellows.

According to the determination of his father, who not being wealthy, could not afford the expense of his further studies, he was obliged to devote himself to another pursuit; but it behooved him, if more cogent reasons had not urged him thereto, to give up these thoughts, as he was without any possible means on the part of college education, so that it was quite clear to young *Hahnemann*, that even in the study of medicine at the University, he could not reckon upon any support from his father. Nevertheless this did not hinder him, in the year 1775, after he had written, on leaving the prince's school, a very beautiful latin treatise, on the structure of the human hand, from entering the University of Leipsic, with twenty dollars in his purse, and earnestly devoting himself to the art of healing.

By the intercession of the counsellor of the mines, *Börner*, in Meissen, he was presented with an honorary admission to the lectures of the greater part of the Professors in Leipsic; but notwithstanding this, there remained many anxieties about a livelihood, which he strove to lessen, by giving instruction to a

rich young Greek in German and French, and by translating medical works from the English into German, for which he took advantage of the nights, in order that he might suffer no time to be lost in the prosecution of the science to which he was most ardently attached. But despite this iron assiduity, he found it still impossible to frequent all the necessary lectures, and therefore limited himself to the most needful, and endeavoured to make up, for deficiences by a good selection of medical books.

In this manner the theory of medicine was soon mastered, and he was irresistibly drawn to the practice. In respect to this, his position was far more critical, for he found little opportunity, there being at that time no common infirmary in Leipsic. Anxious to entrust himself with it, he labored day and night, to enable himself to visit Vienna, where, in the monk's hospital of Leopoldstadt, under the direction of the celebrated physician, *Quarin*, he so distinguished himself in the treatment of diseases, that at the end of a year, when *Hahnemann's* finances were exhausted, *Quarin* strongly recommended him to the governor of Siebenburgen, Baron v. *Brükenthal*, as his family physician, with whom he also accepted at the same time, in Hermannstadt the Office of Librarian and arranger of ancient coins. All his spare time he employed in learning foreign languages, and in the practice of his profession in the city. After about a year and a half he had gathered a little capital, and returned to Germany, chiefly to study medicine in Erlangen another year, and there to promote what took place on the 10th of August 1779 by the public defence of his Inaugural Dissertation.

Richly endowed with the treasures of knowledge, and provided with the needful earthly means for his modest pretentions, he selected Hellstadt in Mannsfeld district for his future residence; but after remaining a short time there, he went over as practitioner to Dessau, where he also employed himself in chemistry, and increased his knowledge of mineralogy and metallurgy. Here also his stay was brief, and he accepted the office of consulting physician at *Commern* in Magdeburg, which he held two years

and nine months. In this station he learned the uncertainty and deficiency of the existing science of medicine, more and more, and his conscientiousness did not allow him the further exercise of its practice. Hence he devoted himself chiefly to his favourite study of chemistry and to writing scientific works. With this knowledge of things, it may be easily imagined that this situation was of no further service to him, and he consequently gave it up; still as he was married and had a family, it was natural that their support, and the instinct of self preservation should spur him on, to procure some other means of subsistence, which with his rich attainments in knowledge could not be difficult. With this conviction he directed his course to Dresden, where dwelt a number of his friends, and where besides, better opportunities were presented for perfecting his knowledge. Dr. *Wagner*, at that time consulting physician in Dresden, introduced him to the hospitals in that place, and procured for him, with the consent of the magistrate, the management of them for a year, and employed him also as assistent physician in his extensive practice, which *Hahnemann*, acknowledged in after life, to have been of great benefit, as *Wagner* was a very adroit, experienced and successful practitioner. Through *Adelung* and *Dassdorf* he enjoyed free access to the libraries of which he made the most extensive use for enlarging his fund of knowledge. In this period of *Hahnemann's* life, a number of chemical and medical treatises, translations of medical works from foreign languages, discoveries in chemistry, &c. &c., were produced by him.

In the year 1789, after a four years' sojourn in Dresden, he removed with a numerous family to Leipsic, in order to be nearer the source of knowledge. About this period, a more encouraging view into nature was opened to his investigations, when he made the highly important discovery which has secured for his name an immortality in the annals of medicine and of humanity. Just at this time the most complete anarchy prevailed in the treatment of human diseases; and the chaos of theories almost caused *Hahnemann* to faint with discouragement,

since from none of them could be derived any true and salutary method of restoring the sick. Although he was earnestly engaged as a most accurate observer of nature's symptoms, and used the greatest possible simplicity in his treatment, which even then gained for him the reputation of a circumspect and successful practitioner; yet he had a lively feeling that he could not have any certainty of its duration, as the foundation was not firmly laid. He therefore withdrew himself by degrees from medical practice, and did not resume it, until he had found a more certain guidingstar, which he could follow in the treatment of diseases. Deeply rooted in him was the belief that, on the usual path, medicine could not be reformed. The healing art, he felt, needed an entire subversion, but its accomplishment contributed not in the least to an easier, safe and more permanent cure of diseases. Nevertheless before he deliberated on this latter, he deemed it necessary to subject the means—the remedies—to a stricter scrutiny than had been previously done, as he saw more and more clearly that these were too little known, and their operation was judged of too superficially, and with a general rather than with a special view.

Accident placed in his hands *Cullen*'s Materia Medica, which he translated into German, and committed to press in the year 1790. He had labored a long time at this translation, and still no beneficial results were obtained, until the confused explanations of the febrifuge virtues of china (Peruvian bark) excited his attention, and made him more observant and certain, that this matter was not as there described. In order to investigate the subject more accurately, he tested this article on the healthy persons of his family, and on himself, and to his astonishment perceived, besides a number of other symptoms, effects, that seemed similar to those of intermittent fever. This was the corner stone of the great system of cure founded in nature, which, after years of investigation, he at length found; and with ardor and habitual sagacity on this hitherto dark field of medical science, at this time enveloped in the incomprehensible chaos of night, he progressively accumulated such a trea-

sure of useful materials, that he was desirous to use them in diseases, and to ascertain if this hint of nature could be thoroughly confirmed according to his previous views. The opportunity for this soon presented itself in the establishment by Duke *Ernst* of Gotha, of an infirmary for the insane at Georgenthal, three leagues from Gotha, in which he was appointed manager by the Duke, and the establishment was opened in the beginning of August 1792. Here he cured, among others, the person who in *Kotzebue*'s lampoon is named "*Bahrdt* with the iron forehead", a maniac, who had been private secretary to *Klockenbring* of Hanover.

Even at this period *Hahnemann* had detractors and calumniators in great number, particularly one, whom he called the most distinguished and best qualified "*Weinprobe*" (liquor vini probatorius), well known as the defamer of Dr. *Gren* in Halle in the year 1793. This, however, did not disturb *Hahnemann*, who pursued his way quietly and prudently, and in the year 1796 he published, in *Hufeland*'s Journal, the first rudiments, under the title of: "Essay on a new principle of discovering the healing virtue of medicinal substances, together with some glances at those hitherto made." For this he gained not the acknowledgement and support of his efforts, but the most barefaced undervaluing and most repulsive coldness. A cotemporary theory of the englishman *Brown*, notwithstanding its extravagance, was found more comprehensible and admissible than *Hahnemann*'s revolutionary doctrine. But he still persevered, and more earnestly, in his simple path, which he knew to be the only true and correct one, for establishing a pure theory of medicine, and building thereon a safe curative practice, and he manifested greater independence in proportion to his experience at the outset of his reformation.

It must have been only about two years that he remained in Georgenthal, for in 1794 he again lived in a garden in Brunswick, and in 1795 in Königslutter, where he performed such decidedly successful cures with his new method of treatment, that physicians and apothecaries joined in persecuting him, and

were instrumental in reviving a law forbidding physicians to dispense their own medicines, so that *Hahnemann* was compelled to leave the country. In 1799 he went to Altona, and soon afterwards to Hamburg, where he made known that prophylactic or preventive of scarlet fever, which excited so great and numerous scruples among the physicians of that time and of the present; even at Königslutter, he had demonstrated it as such, against one of the most violent and universally prevalent scarlatina epidemic, which originated in the vicinity of Helmstadt. Since that time this remedy has found favor with many reflecting and impartial physicians, it having been sufficiently proved. In Hamburg, indeed, *Hahnemann* and his natural liberty of self-dispensing were respected, but there he was too little known, and was consequently unable, in so considerable a city, to provide the necessary subsistence for his family in a short time, on which account, after a short stay in his fatherland Saxony, he turned back, and provisionally settled himself in Eilenburg.

Frequently, even in Hamburg, he was entreated to make known his preventive, nevertheless he well knew, by the history of all times, the ingratitude of the age in regard to great discoveries, and he had no desire, as had occured to other great men, to yield his fame and emolument to another, he therefore would not give publicity to this medicine, unless 300 Frederic d'ors were obtained for it by subscription. This procedure of *Hahnemann* embittered the physicians, and many retracted their former favorable judgment of his preventive, others sought to make parents who used it, believe that it was a powerful poison which would sooner or later have the most fatal effects on youthful constitutions.—Until that time, *Hahnemann* was diposed to treat opposers with mildness, and notwithstanding the unfriendly treatment, which he experienced without intermission, he with great forbearance spoke his mind in an essay entitled: "A glance at the humanity of collegiate physicians in the beginning of the new century." This was his last genuine manly appeal, but as it received no attention, it was also the important verge for his

future position towards medicine and physicians. From this time he withdrew himself entirely from the latter, and combated for his system, whether peaceably or to the death, against the prevailing medical systems, to which he was naturally not a little impelled by the everlasting jarring with apothecaries about the self-dispensing of his medicines.

Despite the manifold inquiries, I was unable to get any information respecting the duration of his residence in Eilenburg, or how long he had lived in Machern, a village four leagues from Leipsic. During about two years' sojourn in Dessau, there appeared several productions of his mental activity. He was previously some time in Wittenberg. He had made choice of both places, in order that he might devote more time to the perfecting of the homœopathic healing art, on which account he lived only to himself and his study, abandoned all medical practice, and only resumed it when he went to Torgau in the year 1806. From this place, too, it must have been, that his first thoroughly scientific work, which gives the desired knowledge of his new principle of cure appeared—published by Arnold in Dresden 1810, under the title of "Organon of the rational art of healing." This book gave the signal for a violent warfare against *Hahnemann*, and a number of sharp reviews against it, and articles against the revolutionist himself, made their appearance; in which his doctrine was pronounced absurd, and with an assumed superiority and want of respect charged with insufficiency. His tests of medicines, and the minute doses especially, were denounced as silly nonentities, or hurtful poisons. —In short the opponents were numerous, and it could be foreseen, the incipient war would be of long continuance, as *Hahnemann* had aroused it by divulging his reformatory doctrine opposed to that which had the sanction of thousands of years, and had brought on himself implacable enemies, who believed their sacred palladium to be endangered, and for the preservation of which they fought, with the utmost bitterness, not always with knightly and honorable, but with illicit weapons, which ill became them in matters of such great importance.

With the intention of instructing young physicians and rendering them favorable to his doctrines—for he saw the older ones were altogether inaccessible—he came to Leipsic in the year 1811, in order to deliver lectures, and he did not shrink from the task, as by so doing he had the privilege of coming forward as a disputant before the medical faculty; which he took advantage of in a treatise written in Latin, on the 26th June 1812, and in which he selected his son, *Frederick Hahnemann*, as respondent, and gained unusual applause by the stupendous erudition displayed therein From this time forth he gave regular semi-annual lectures, for which his Organon served as a basis, and which he kept up on Wednesdays and Saturdays, from 2 to 3 o'clock in the afternoon. The author of this work attended these lectures for about two years. Perhaps he might have introduced his doctrines more easily to the physicians and students, if he had more dispassionately discussed the principal points of his Organon, than was his custom in his lectures. His manner unfortunately was not calculated to gain for himself and his doctrines many friends and adherents; for, whenever it was in his power, he poured forth a flood of invective and abuse against the old system of medicine and its advocates, so that the number of his hearers hourly diminished, till at length only a few of his pupils attended. For several years he continued these lectures undisturbed, and occupied himself constantly till the year 1822, in completing his Pure Materia Medica, of which six volumes in all were published, and which have outlived the third edition. In the year 1813, which afforded the medical profession so many opportunities, to distinguish itself, *Hahnemann* appeared in a point of view, which no physician of that day could controvert; he celebrated, in the true sense of the word, the triumph of his doctrines, and found, in the treatment of the hospital fevers—at that time prevailing throughout Europe, having been introduced by the French on their retreat from Russia,—the repeated confirmation of the remedial law of nature discovered by him. Out of the great number of patients in that part of the country, treated by him; but two patients

died, one a very aged man, and the other in consequence of neglect of the rules of diet.

In the year 1819, the persecution and oppression of this new doctrine became more and more violent, and continued for some years. It was carried to the most disgraceful pitch by the Leipsic physicians and apothecaries, and the author of this sketch could give a picture of the martyrdom of *Hahnemann*'s pupils at that time, which does not tend much to the honor of their persecutors. From this time *Hahnemann* was incessantly held in check by the Leipsic apothecaries, who were constantly entering compl ints against him, so that he had no longer any enjoyment of his life, and was obliged, in February 1820, to hand in to the court of aldermen at that place, a written defence, which, however, had no other effect, than to cause him to be publicly notified, at his own dwelling, "That he would be held in the penalty of 20 dollars for the dispensation of each and every article of medicine to any person whomsoever, lest he should give occasion to more severe measures."

Under such circumstances, to remain in Leipsic was useless, as he saw, that his doctrine, to which he had devoted more than 25 years of his life, and for the love of which he had denied himself every enjoyment, was more and more opposed, and its progress impeded, contrary to his expectations. On this account, the proposition of His Highness Duke *Ferdinand* of Anhalt-Köthen, to take up his residence at Köthen, and consider it an asylum for his doctrines, was highly agreeable. With joy he acceeded to this proposal, and soon left Leipsic, never again to take up his residence within its walls. In Köthen he found a friendly reception, and obtained besides the title of private physician to the Duke. From this time his life was more peaceable, for without further interruption he lived only for the more extensive cultivation of science. He left unnoticed the malicious scribblings about him and his remedial system, not deeming them worthy of a rejoinder; he only labored at the greater works, which he had been preparing for ten years, in order to complete them before his death, to lay them openly before the world, and

establish for himself an imperishable monument of immortality. They were these: "Chronic diseases, their peculiar nature and homœopathic cure",—his last and greatest work, which appeared in the year 1828 in 4 volumes, published by Arnold, and the second edition, ten years later, was enlarged one volume.

The 10th of August 1829 was a joyful day for the venerable old man, being the anniversary of the one on which, fifty years before, he had obtained the doctorate. Gratifying and memorable in more than one respect, was this day for him and for the homœopathic system. With it he closed half a century, which had been devoted, in the most candid, zealous, and successful manner to the service of humanity and science. What he had sown in the thorny past, he now reaped in the fame-crowned present; what he had combated for heroically and unremittingly, now wreathed the sternly-serene brow of the happy conqueror, and around *him* who had been so long exiled, persecuted and insulted was entwined the most gladsome recognition, heart-felt reverence, gratitude and love, of the wide circle who surrounded him, far and near, visible and invisible. Several of his pupils and friends assembled on that day at *Hahnemann*'s dwelling, having made ready all things for the celebration. On a table resembling an altar, adorned with flowers and entwined with oak-leaves, was placed the well-executed bust of *Hahnemann*. On a side table stood a beautiful oil portrait of him, and several lithographic copies taken from it. After *Hahnemann* was introduced, his bust was crowned with laurels, amidst appropriate addresses and congratulations. One of his pupils handed him a splendidly written programme of the feast, and another presented him with a box, lined with red velvet, containing a gold and silver medal, on one side of which was a well executed portrait of *Hahnemann*, with his name, the date of his birth, and promotion; and on the reverse, the fundamental axiom of his doctrine: *similia similibus*. I omit, lest I should be tedious, the other beautiful, judicious and rich presents, which on this day were sent from far and near to this honored sage by men and women in homage of homœopathy.—With deep emotion, the venerable old man, with

heartfelt and affecting words, giving thanks to the supreme being, that he had been permitted to make so great and important a discovery, and favored with a long life, full of bodily and mental vigor. With equal depth of emotion he also thanked those present, who had so much honored him by their presence on this day, thereby made memorable in the history of his new system. And henceforth annually on this day, a meeting of physicians and friends of homœopathy takes place by appointment, which is known by the name of "Central Union".

In the next year the so much dreaded Asiatic Cholera infused new and greater activity into the life of *Hahnemann*, and gave fresh evidence of his talent, in finding out the truth among the numerous and confused experiments and observations, which only his acuteness, and his excellent gift of observation could accomplish, and which added so much to his reputation, as he never had the opportunity of examining for himself the nature of this disease.

Soon after this he was bereaved by death of his first wife, and for several years he lived under the care of his daughter; but in the year 1835, on the 18th of January, he was married, the second time, as an octogenarian, to *Marie Melanie d'Hervilly-Gohier* from Paris, 35 years of age, whom he had become intimately acquainted with as a patient, and whose eminent endowments of mind he admired and prized. With her he desired to close the evening of his days in peace and serenity. The high estimation in which they held each other favored and realized this wish; no motives of self interest led to this bond, for his wife sprang from a good and rich family, and had the independent disposal of her wealth. That this noble hearted wife of the venerable *Hahnemann* attained her object, and succeeded in promoting his happiness, is clearly proved, as she persuaded him without difficulty, to leave his German fatherland, and live with her in Paris the remainder of his life. This proposal he carried out in May of the same year, and exercised from that time in a strange land, with decided success, his new medical experience with unclouded powers of mind for the good of suffering human-

ity. Here he lived eight years and some months, and died on the 2d of July 1843, after having suffered for 15 years, regularly every spring from a bronchial catarrh, apparently in consequence of his great age, verging on paralysis of the lungs.

Hahnemann was an honorable man, and the peculiarities for which he was blamed, probably indeed, were owing to the various unpleasant situations of his life, to the mistaking of his character, the unfounded and malicious calumnies and invectives, and his final withdrawal from all social intercourse. The author of this work has had, for several years, free access to *Hahnemann's* house, and might at least pass just judgment on him as a man, and so young as I was at that time, I have nevertheless by later, riper experience and knowledge of the world, not been able to change my opinion of his character; the only faults, of which I cannot entirely excuse him, were mistrust and avarice, but so modified, that only a long intercourse with him enabled them to be discovered. In his domestic circle he displayed an amiability, which charmed every one, as I with others of his favoured students had frequent opportunities of observing. There sat the silver-haired old man, with his high, arched, thoughtful brow, his bright, piercing eyes, and calm, searching countenance, in the midst of us, as among his children, who likewise participated in these evening entertainments. Here he showed plainly, that the serious exterior, which he exhibited in every day life, belonged only to his deep and constant search after the mark which he had fixed for himself, but was in no respect the mirror of his interior, the bright side of which so readily unfolded itself on suitable occasions in its fairest light, and the mirthful humor, the familiarity, and openness, the wit, &c., that he displayed, were alike engaging. How comfortable the master felt in the circle of his beloved and his friends, among whom he numbered not only his pupils, but also the learned of other faculties, who did homage to his learning; how beneficial was the recreation which he then allowed himself after 8 o'clock in the evening seated in his arm-chair, with a glass of light Leipsic white-beer. It was highly interesting at such times, to see him become

cheerful, as he related the procedure of the older physicians at the bed of sickness, when with an animated countenance he shoved his little cap to and fro upon his head, and puffed out clouds of tobacco smoke, which enveloped him like a fog; when he spoke of his deeply affecting life, and related circumstances of it, his pipe often went out, and one of his daughters was then instantly required to light it again. Besides his peculiar science, he descanted on chemistry, subjects of natural science, conditions of foreign countries and people, with which last he was particularly entertaining; but he appeared displeased when in these hours his advice was sought in cases of disease; he was then either laconic, or called out to the patient in a friendly way: "to-morrow on this subject", not for the purpose of discouraging him, but because he felt himself both bodily and mentally too much unbent; for he often on the next day in his consulting hours, would bring up the subject himself, take the patient aside and converse with him in a friendly way, and was well pleased if he appeared reconciled; he would even go so far as to condemn himself, or would frequently yield his opinion to that of his opponent.

His hours of audience were from 9 to 12 in the morning, and from 2 to 4 in the afternoon. No person was permitted to enter the hall, who had not first passed the review, which function was performed every week alternately, by one of his daughters, and for which she placed herself at a little window next the hall-door, like a warder. Usually his apartment was filled with patients when I entered, and a considerable time consequently elapsed before my turn came; as he never allowed a visit to prevent him giving the necessary attention and reflection to each patient. He examined accurately, and wrote down in his journal himself, all the symptoms of which the patient complained, even those apparently insignificant, to which he successively referred, previous to furnishing the medicine required and which was obtained from another room. After the clock had struck 12 in the morning, and 4 in the afternoon, no visit from any quarter was received. At 12 to the minute, he was called to dinner, after which his

attention was not easily drawn to any thing else. On one occasion, in the warmth of conversation, having twice disregarded the call, at the third more earnest one from his wife, he smilingly observed: "This time I shall get a gloomy look!" This expression several times heard from him, convinced me, that this great man, who had so much influence over others, had to be placed under a guardian in his own house, which, however, he willingly endured, and granted to the wife this small triumph, since she watched with the greatest attention and punctuality all his peculiarities, sought to gratify them, permitted him to want for nothing, and also undertook alone the bringing up of his children, so that they might not disturb him in his numerous engagements.

After the expiration of the time allotted to giving advice in the afternoon, it was the daily custom of himself and family, in all weathers, to take an hour's ramble through the city, where he walked, arm in arm with his wife in the van, and several paces behind them came his three daughters also arm in arm; occasional only a more extended or morning promenade to Schleuzig, little Kuchengarden, Gohlis, &c., was undertaken. As he was very anxious that his pupils should assist him in proving drugs, he thought it right to treat us now and then; he therefore occasionally invited us to a social supper, to which however those only obtained admittance who had distinguished themselves by industry, intelligence and strict morality. Here matters did not go on altogether homœopathically; for, the food was temptingly savory, and instead of the usual white-beer, a good wine made its appearance, which however was always used very moderately, out of respect for the master. Here cheerfulness, humor and wit, always reigned, and the merry ones still found new incentives to mirth; for usually there were other highly intellectual men invited. *Hahnemann* was on these occasions the happiest man, and joined with the rest in the most mischievous mirth, without however violating the dignity of his station, or in any respect making himself the target for wit. About 11 o'clock we took our

leave of *Hahnemann*, and banqueted long after on the recollection of these delightful evenings.

He has truly maintained like a martyr his new system of cure, and outlived many gloomy, sorrowful hours. The earnest pursuit of truth was the sole object of his whole life, and in consideration of this lofty aim, he freely dispensed with the lesser and evanescent pleasures of life. Peace to his ashes!

HOMŒOPATHY.

Homœopathy, which half a century ago was altogether unknown in the treatment of diseases, and which, since it has become known, has occasioned so much controversy and malignity among physicians with respect to its being beneficial or injurious—; has for the last quarter of a century made such remarkable advances, that its suppression, which had been contemplated by certain persons in authority, has now become impossible. A fact, which must now be admitted, not merely from its enormous propagation abroad, but much more from its ever progressively distinguished intrinsic worth. It is indeed almost invariably the lot of every great and beneficial discovery and new truth, to make its way with difficulty, and to be exposed to the shafts of derision, and the prejudices of the evil disposed, whereby the multitude are captivated; nevertheless, the greater the persecution and malice to which such truth is exposed, so much greater, purer and more refined has it come forth from the conflict; for in reality this is its legitimate touchstone, that unlike a phantom which at first grasp relapses into nonentity, (which has been the fate of so many systems in medicine) it has on the contrary shown itself able courageously to withstand the impediments opposed to it, with valid arguments and striking demonstrations.—But I must not anticipate. Although I now write only for the laity, it is presumed, that the sound judgment of the reader, will be able to judge of the utility or worthlessness of this method of cure, when I shall have accurately presented homœopathy in its clearest point of view from its first rise to the present time, with its pre-eminent and peculiar principles.

Homœopathy forms, as a method of cure, a direct opposite to the older practice, called *Allopathy*, inasmuch as the former

employs for the cure of human maladies such medicines as operate directly on the diseased organ, while the latter makes use of remedies which stand in indirect relation to the existing disease, that is, such as affect and disorder another organ not attacked, with the view of directing the disease to a less important structure in the human organism. The word *Homœopathy* is composed of the Greek words *omoios*, similar, and *pathos*, suffering; and by this signification presents the governing principle of this method of cure: *heal similar with similar!* Its author and founder was that great man, distinguished alike by genius, sagacity, and erudition, Dr. *Samuel Hahnemann*. For several years he had relinquished the treatment of diseases, because the art of medicine was less satisfactory than he had expected; he therefore withdrew from practice, and employed himself entirely with chemistry and authorship, in which however his constant object was, to discover a new and safer way of treating diseases. In the translation of *Cullin*'s Materia Medica, he perceived the first ray of light, and his ever active and searching mind, led him towards the new dawning of a brighter day. It was the effect of the Peruvian bark, which led him to the idea, that medicines must have the power of removing diseases, through the peculiar similar effects of each remedy. In order more accurately to investigate this theory, and not to mix together the symptoms of the disease and of the medicine, he selected himself, as a sound person, for personal experiment, took a quantity of the best China bark in powder, and accurately noted the symptoms, which he experienced during its action, by which every doubt relative to the operation of medicines was wholly removed. He still did not venture to make known this remedial law, so conformable to nature: *like cures like*, before he had made experiments with other drugs on himself and on other sound persons, and had proved the results, according to this principle, by trials and experience at the bed of sickness. In a word, he observed how medicines operated on the human body, when viewed in the unruffled mirror of health, with the conviction, that the changes and feelings which each article produces

in the sound organism, are the only clear indications—uninfluenced by any conflicting deceptive symptoms of the disease—which could afford the unprejudiced observer a distinct idea of its specific tendency, its peculiar, clear, positive power, by which to change the condition of the body; that is, to reduce it, when sound, to a diseased state, similar to that (induced by disease) which it has the power of curing. It is worthy of notice, that *Hahnemann*, at the commencement of his great discovery, made use of those articles for proof on himself and others, which possessed an extensive power of action, and were peculiarly adapted to the cure of a number of the most common, and frequent diseases; these medicines, of which some had become obsolete in the old practice, and others on account of their heroic powers were very seldom administered, he named "*Polychrests*"; among these he classed Nux vomica, Rhus toxicodendron, Bryonia, Pulsatilla, Ignatia, Belladonna, Aconitum napellus, Arsenicum, and many others.—After he had accumulated a number of clear experiments on the sphere of action of a number of medicines, he came forward openly in his book, published in Latin, entitled: "Fragments on the positive effects of medicines", that is, their operation observed on the healthy body. Five years afterwards his "Organon of the rational art of healing" appeared, in which were comprized the principles of this doctrine of cure, arranged somewhat more accurately.

The chief precept which originates from the principle already sufficiently spoken of, is: to select the medicines according to the symptoms induced in the healthy body after careful and repeated observation, and oppose the group of symptoms, presented in each case of disease, by a similar group of drug symptoms met with in the series, and which the medicine given is capable of exciting in the sound organism; thus will the disease be safely, speedily, mildly and permanently cured. Or in other words: ascertain which medicine among those tried on the healthy body, has produced effects most nearly resembling the whole of the symptoms met with in the case of disease to be treated, and this remedy will effect a safe and speedy cure. This

leading principle also teaches at the same time, that the homœopathic treatment demands for its exercise a knowledge of the power of medicines hitherto unknown and also a more than ordinary comprehension and estimate of diseased symptoms. The knowledge requisite to this, I have already pointed out, and also, that this knowledge can only be acquired by proving the medicines in healthy persons. In these provings great precaution, accuracy, and close observation during the time of experiment is necessary; as well as strict conscientiousness, in order that the medicines employed may be pure, genuine, and efficacious. The more powerful substances are to be given only in minute doses, and to strong persons; those of milder action in more considerable doses, and the weakest to persons entirely free from disease, who are delicate, irritable and susceptible to the action of such medicines. The best results will be obtained, when these medicines are taken in the most simple form; the fresh expressed juice of the indigenous plants for instance should be mixed with equal parts of spirits of wine; the exotics reduced to a coarse powder and made into a tincture with alcohol diluted with water: and the salts and gums, dissolved in water immediately before they are taken. According to the experience of *Hahnemann* and some later homœopathic physicians, even small quantities in the higher dilutions act strongly on healthy persons, and give satisfactory results. And some medicines, such as Natrum muriaticum, Carbo vegetabilis, &c., must be tested in the higher dilutions, if we wish to ascertain their effects; as virtues are first developed by trituration and dilution, not displayed in their crude state.

Every medical substance, which is to be proved, must be administered alone, without any admixture of foreign substance; nor should any thing of a medicinal nature be taken, as long as it is desired to observe the effects. The diet should also be attented to, and all spices, aromatic herbs, spirituous and stimulating drinks avoided; excessive exertion of body or mind, dissipation of every kind, and undue emotions or passions are equally injurious during the time of experiment; it is also necessary, in order to insure acute observation, to avoid any occupa-

tion requiring close mental application. The person experimented on must voluntarily assume the requisite attention. And especially is it indispensable to have a healthy body, and sound intellect, so that the sensations noticed may be clearly written down. When the observations are thus carefully made, it will soon be perceived, that every medicine excites a twofold action in the human organism, a primary and a secondary effect. This is occasioned by the article taken, changing more or less the vital power, and exciting a certain alteration in the state of health, of longer or shorter duration. Although a product of the medicinal and vital action, it belongs rather to the influent potency. This influence (primary) strives to oppose its energy to our vital power; this strife is owing to our tenacity of life—an automatic activity of the same, an after action or reaction, but in diseases called curative action, since in these it presents no directly opposite condition, and nature seeks merely to render her preponderance effectual thereby; so that she strives to get clear of the oppressive excitement (the medicine) as speedily as possible, and return to her normal state (curative action).

By the experiments with medicines on himself the physician gains a twofold advantage; first, he becomes a careful observer in diseases, and secondly he learns to know unequivocally and truly the characteristic properties of remedies, since no other medicinal influence, no previous diseased symptoms have interrupted the developement of the powers of the medicine, and he therefore obtains a true image of its peculiar virtues, and consequently of its true curative powers (physiological observations of the medicines).—In this manner homœopathy has gradually and constantly extended its knowledge of medicines, and formed a new system altogether its own, with propriety named by *Hahnemann*, the *pure materia medica;* the more, as it is established by experience, and contains only the pure, unsophisticated language of nature, most carefully inquired of and well understood, without foreign mixture. Homœopathy is now in possession of a great number of proved medicines, which are to be found not only in *Hahnemann's* writings, but

also in those of many of his pupils and followers. The difference between such a materia medica and one of the old school, *Hahnemann* has shown in the treatise entitled: "Illustration of the Sources of the ordinary Materia Medica."

Just as simply, as in the investigation of the effects of medicaments, homœopathy goes to work in tracing out diseases. She is just as surely convinced of the truth, that the foundation of every disease is laid in a change in the interior of the human organism, as the old school, but she does not suffer herself to be misled into recognizing this internal change, this essence of disease, with perfect certainty, as it can be but darkly and fallaciously conjectured by our understanding. *Homœopathy* is also certainly of the opinion that the invisible morbid changes in the interior, and the outward changes, of the state of health apparent to our senses, constitute that which we call disease. But since that is in no wise free from illusion, she depends solely on the totality of the symptoms, as the side of the disease turned towards the physician; she recognizes it as that, which is needful for him to know in order to heal the disease. She recognizes these symptoms, these changes of body and mind, evident to our senses, these external perceivable appearances of disease, as those signs, to which the most undivided attention is to be given, without drawing from them any conclusion concerning the essence of the deeply hidden interior of the diseased organism, and its ever invisible changes. In order to investigate with accuracy such an image of disease, the appearance of the symptoms at a particular time of the day or in different positions of the body, the most probable causes of the disease, &c. must not escape our notice, so that the nicest peculiarities of this outwardly reflected image of the innate power, may stand livingly and distinctly before the mental eye of the physician. And he may thus the more safely select a remedy indicated in the whole of the symptoms by its pure effects on the healthy human organism, which will by removing these outward perceptible symptoms of the disease, at the same time extinguish and destroy the internal changes; for it is not to be supposed that after

the removal of all the symptoms of disease, and of the whole compass of perceptible incidents, any thing but health can remain. In thus investigating disease, every internal case shows itself as a peculiar one, yet never in all the nice shades described; and hence it is evident, why *Hahnemann* entirely rejected the classification and nomenclature of diseases of the old school, when the curative treatment was to be based on such names, and valued them only as a readier means of illustration and review. Although it is true, that the exciting causes of disease do not remain mechanically, but for the most part disappear with their effects—mechanical and chemical irritations excepted —and on that account also do not admit of medical treatment, since sex, age, manner of living, state of the weather, etc., impress upon their products a peculiar character. Yet homœopathy requires nevertheless a rigid observance of these signs of disease, in the investigation of a case, since experience has taught her that the right choice of a remedy, in many cases, depends solely on this knowledge, which often also leads to the specific for the case in hand.

When the physician has obtained, in this way, a correct and distinct image of the disease, he must select, according to the principles before mentioned, among those substances, the pure effects of which are accurately known, one which will affect a healthy person in a manner as similarly as possible; that is, one which will excite in him symptoms very similar to those presented by the disease to be treated. In administering the medicines, the following rules must be observed: First, the medicine must be given in very minute doses, whereby an unnecessary and tedious delay in the recovery is avoided; indeed, according to the views of *Hahnemann*, a dose can be scarcely so small as not to relieve, overcome, nay perfectly cure and annihilate, an analogous disease. This is clear and obvious, and until now an almost universally unheeded law of nature; which indeed could not have been discovered sooner, so long as there was no other way of investigating the effects of medicines discovered, which was reserved solely for homœopathy, the law of nature—that a

weaker dynamic affection in the living organism, will be effaced durably by a stronger, when the latter (in a manner deviating from it) is very similar to the former in its expression. This depends on the fact, learned from experience, that the human body is much more easily excited by medical substances, and to a change of condition by them, than by morbid, noxious and contagious matters; or, what amounts to the same, that the morbid, noxious matters possess a force subordinate and conditional, but the remedial agents, an absolute, unconditional, and greatly preponderating power, in changing a diseased state of the human body. This law of experience has been gradually, and by long continued observations, established; and has at the same time contributed more and more to the diminution of the doses of medicine, which were much too large, and in many cases followed by an unnecessary aggravation of the disease: and also to strip the material itself more and more, and thereby develop its dynamic, spiritual virtue. Hence altogether has arisen, from a view of the position of medicine hitherto, and the calculations of ordinary life, a minuteness of dose that borders on the incredible, the inexplicable, even on the ridiculous; and only overcomes all prejudices by the fact, that the efficacy of these minute doses is being daily established by experience.

A second rule in the administration of homœopathic medicines is: Only to give a single article at a time; because every medicinal substance was separately tested on the healthy subject, and also because the effect of two medicines given at once become alienated, modified, and even annulled, or a mixture of the two is occasioned, the pure effects and true properties of which, in the diseased organism, cannot be ascertained, unless an experiment should be first made with the medley on the healthy body. As yet single substances enough present themselves, whose pure effects it has not hitherto been possible to investigate. In either case, the administering of two remedies at once in a disease would produce more harm than benefit, and therefore it is incumbent strictly to obey this law; and likewise, because it has given evidence that in very many cases a single article suffices

for the removal of a recent disease, otherwise very similar, imperceptibly in a few hours, which, when somewhat older, would require some days for its removal. But where one medicine is not sufficient for the complete cure of a disease, which is probably the case in all chronic affections, after allowing full time for the action of the first remedy, another suitable one, nearest in analogy to the existing state of the disease, must be given, followed, if the patient be not fully relieved, by a third; and so on, till the last traces of indisposition be obliterated. It is seldom the case, that where several medicines are found necessary in succession, for the cure of a disease, the last article will be again the most suitable one, since almost always the group of symptoms is so changed, that another remedy is more appropriate.

A third very important rule in homœopathy is: Not to administer a second dose of the same medicine, or another suitable one, before the time of action of the first is fully past, that is, till it has accomplished all that it is capable of. This duration of action extends, as experiments on the healthy have shown, for a length of time, and in the diseased organism still longer the more suitable the medicine selected; which in the first moment of complete spiritual development, points out where it comes in contact with the morbid focus, in which the susceptibility for its reception and assimiliation is at the greatest, wherein the reaction of the body (opposing action of the *vis vitæ*) is excited, and manifests a strife so much the more powerful against this heterogeneous irritant of the organic frame, in order to remove it as speedily as possible. When once this activity, this resistance, this opposing action of the living power, is aroused, it does not, after the removal of the medicinal irritant, soon return to its former slumbering state, but continues to be active, in order to restore the equilibrium of disturbed organic life, in the point once assailed. This rule, first instituted by *Hahnemann*, has of late, even by himself, undergone modifications, to which the so much dreaded Cholera essentially aided. In this rapid disease, which often proves mortal in a few hours, it was painful for the homœopathic physician to see the disease

become more and more violent, without being able to check it, for, according to the earlier views, the medicine had not completed its action. Necessity exculpated many, and hence it was also that physicians who used the remedy, which they judged to be best adapted to the case, gave it in frequently repeated doses, to their confiding patients. Even *Hahnemann* himself, in this fearful disease, ordered *Camphor* internally in very frequently repeated doses, and also externally to bathe the extremities. From this time forward the homœopathic physicians made use of this practice in other diseases, and none complained of any disadvantage resulting therefrom. This practice requires some limitation in chronic diseases, where the repetition of doses are at least not called for so often, as in the acute and highly acute diseases.

After this accurate statement of the most important principles of homœopathic treatment, I will now notice the other modes of administering medicines, so that the reader may be able to compare them with these. According to *Hahnemann*'s views, and after the manifold experiments and observations instituted with Homœopathy, and the experience drawn from them, she (Homœopathy) remains the most important, since, by virtue of her choice of the remedies according to similarity of symptoms, the seat of the disease must be at all times found, and met in every point; it follows, consequently, that she understands how to choose, for each individual case, the specific, direct, safe, speedy and lasting curative medicine; and is therefore rightfully entitled to the name of a specific method of cure. The second mode of administering medicine in disease is the allœopathic and heteropathic, which without any particular reference to the peculiar morbid conditions of the body, attacks the parts most free from disease, in order to lead off the evil through these, and remove it from the body. This is not a conducting off of any material morbid matter, which indeed it was in early times supposed to be, but an auxiliary method of cure by derivation, in which nature sets the example in her efforts to restore her diseased organism: to throw off fever, for instance, by sweat and urine, pleurisy by bleeding at the nose, sweating, and expectoration of

mucus; other diseases by vomiting, diarrhœa, hemorrhoidal discharges, &c.; or by abscesses and ulcers, which nature sets up in parts distant from the seat of the evil. It may be called an imitation, an indirect method of cure, as the vital powers of the patient are reduced by the application of stronger, more active irritants, at a distance from the seat of disease; and on organs least allied to the part affected, by producing evacuations of various kinds, in order simultaneously to remove the evil. This allœopathic method of cure seeks, by this imitation, to excite in the human system, in parts least disordered, and best able to bear medicinal disease, powerful new symptoms, (for which they give massive doses of medicine,) which under the appearance of Crisis, and under the form of secretions, overcome and carry off the primary disease, thus counteracting its course and determination. Her near to and apparent conformity with nature, is the antagonistic method of cure. The third and only remaining method of practice, and except the two mentioned, the only possible way of administering medicine in sickness, is the antipathic, enantiopathic, or palliative, which consists in administering against every troublesome, prominent symptom of the disease a medicine, which, it is known, will produce the direct counterpart of the symptom to be overcome, and from which afterwards the most speedy (palliative) relief is expected. Thus, for instance, this palliative practice prescribes strong doses of *Opium* against pains of every kind, since this medicine speedily benumbs the sensibilities; and in like manner this medicine is prescribed against diarrhœa, as it speedily checks the vermicular motion of the bowels, and thereby induces constipation; also against wakefulness, because *Opium* suddenly brings on a benumbing, stupid sleep. This practice likewise directs purges, when the sick have for a length of time suffered from costiveness and constipation; also to warm the patient immediately, when he complains of chilliness and want of vital heat, by placing him in a warm bath; those debilitated from weariness, are permitted to drink wine, whereby they will be in a moment enlivened and refreshed, &c. However, this method is the least correct, as it only takes into view one single

symptom, and consequently attends to but a small part of the whole; hence it is evident, no help for the totality of the disease can be expected; on the contrary, after a relief of very short duration, a greater aggravation of the symptoms so palliatively quieted follows, and indeed a deterioration of the whole disease. This method of cure is most admissible in those cases, in which diseases suddenly affect persons previously healthy, and are mild —but certainly not in chronic complaints—or when the disease is incurable by the physician, and his chief object is to afford the patient momentary relief of his sufferings.

The progress which homœopathy has made since its origin, especially during the last quarter of a century, may well be called extraordinary; for before that time, it was almost exclusively in the hands of *Hahnemann*, who could not possibly, however, himself do all that was necessary to bring to full perfection this blessed method of cure, designed for the happiness of all mankind. From that time forth the older and younger physicians have turned their attention to it, and according to their ability have directed their efforts towards its completion, yet still there may be required many generations before it shall have attained perfection. This conviction should nevertheless urge the advocates of this doctrine to labor the more diligently to hasten this desirable object. Much has already been accomplished, by words as well as by deeds, for now one, now another, has pointed out the way, in which homœopathy should be managed, if it is to be still more and more prosperous. A number of treatises by men of great mental ability, on different objects serviceable to homœopathy, have given instructive hints, in the numerous communications of successful cures with this method: the latter very often tell us, that disease was not merely aggravated by the old system of cure, but according to the confession of physicians themselves, have thereby been rendered incurable. What a triumph for this youthful doctrine, which can oppose scarcely half a century to the almost three thousand years of her elder sister, that she proves beneficial where the other is at the limit of her skill. Is this no evidence of her practical

usefulness, of her pre-eminence? She desires no judgment whatever according to the mere letter, from a superficial, transitory view, but she demands to be strictly judged according to results, and therefore calls on every one, who is disposed to venture on the earnest scrutiny: Make it close, but make it sufficiently close, and you will find me thoroughly established! Indeed, it is not otherwise possible rightly to understand and judge of homœopathy, than by its results; for she, with every other experimental science, is only to be inquired of by experience, where she at all times gives the same results; while judged from theoretical grounds (which however always depend on the individual opinion and views of the critic), she often gives quite contradictory judgments. I remember well what happened to the deceased erudite professor of morbid psychology, *Heinroth* of Leipsic, and the deceased city physician, *Messerschmidt* of Naumburg, who where intimate friends, and made a joint promise that they would overturn homœopathy both theoretical and practical. The theoretic *Heinroth* appeared to have effected this fully; on the contrary, the practical *Messerschmidt*, from a *Saul* became so thorough a *Paul*, that from that time forth he treated his patients in no other way than homœopathically, whereby the former friendship of the two men suffered a significant check. And thus, homœopathy, in defiance of the numerous literary attacks which she endured, in greater number formerly than recently, has marched calmly on her self-beaten way; and by her persistence hitherto, we judge that she will attain to a consideration more consistent with her civil and state rights, on an equality with the older practice, which until now hat been altogether impracticable; since for a long time she has not been recognized, in medical transactions, as worthy of consultation, or deserving of public appointment to any office of city or state. This condition of things cannot continue long, for the number of her adherents and advocates increases daily; and her extension is not bounded by Europe alone, but keeps equal pace in all parts of the world, and will even be outflanked by America, which can readily be demonstrated, since this part of the world

is not under the pressure of a mass of petty laws, but science and art are permitted to extend themselves in every direction, without fear of being stretched on the bed of Procrustes. In a great measure it is a mistaken love of truth, that urges the physicians of the other party, continually to oppose new obstacles to the progress of homœopathy, since it bluntly intrudes upon their habits of thought, investigation, and treatment.

A few words now on the defects with which homœopathy has been unjustly reproached. It is said of her, that she lacks both science and rationality, and even *Hufeland*, her most moderate antagonist, assigns her a subordinate rank in modern medicine. Were she deserving of this reproach, then should she of right forfeit a station in the ranks of medical science. But the greatest part of the censures obliquely cast upon her, rests chiefly on entire ignorance of her character, upon a judgment proceeding from a wrong point of view, and on intentional misrepresentation. I showed above, in what manner *Hahnemann* discovered the chief axiom: *Cure like with like;* in what manner he built upon this certain and sagacious observation of nature; how all that he did, in order to the establishment of this principle, united to attest for him still new confirmations and results. Consequently this method of cure must rest on a firm basis, recognized by nature's law, act with it, and enjoy accordingly a scientific union and consequence, which no other method of cure can easily disturb. That all this could only have been attained by an accurate knowledge of each separate branch of medicine, and of the natural sciences generally, as with the complete harmony of these, must be evident to any one. And he who with calm and unprejudiced view, without preconceived opinion, will submit homœopathy to proof, will certainly at the conclusion be obliged to say: that she can by no means dispense with the study of medicine, and the preparatory instruction of every physician in the essential auxiliary sciences, as anatomy, physiology, physics and chemistry, pathology, dietetics, &c., and is therefore in no respect behind the older medicine, and claims at least as much scientific knowledge as that. In the strictest sense of the word, it is an

empiric method of cure, but does not rest on that gross empiricism, which is made use of in the old school; after all the known remedies have been fruitlessly employed, the physician then experiments with an article little known, or enters on his irrational treatment on mere conjecture. Homœopathy, on the contrary, acts circumspectly and honestly, according to a method clearly understood, a method founded on the purest experience (empiricism). That a method of cure resting entirely on experience, should not have attained the greatest possible perfection in half a century, may be easily conceived; as indeed the old school of medicine, in a period of nearly three thousand years, cannot boast of such unanimous consequences and striking efficacy in the most frequent and violent diseases, as can homœopathy.—To the physicians of the old school, homœopathy will point out a very limited sphere of action, which has even been occasion of reproach, and imputed as a fault. Were the limits within which she is capable of acting, really so narrow, she would not have made so many epochs in medicine; but her efficiency, so often demonstrated, even in cases, where, in allœopathic practice, every hope of recovery had vanished, refutes this charge of itself, and shows, that they who cast the reproach, were ignorant of this new doctrine, and never practically proved it at the bed of sickness. But let homœopathy be tested in a practical manner, and experience will soon teach, that her sphere of action cannot be confined to prescribed limits, and the allegations against her must be left more and more in the distance; as her curative powers are not confined to dynamic sufferings alone, but extend to those which heretofore, and in the view of the old schools, belong to the department of surgery. If the ruling principle be correct—and abundant experience shows it to be so—then her inefficiency in many cases cannot be imputed to her fundamental axiom, but to the want of an adequate number of medicines, the true virtues of which had been tested; in a word, to the present incomplete state of the homœopathic discoveries, and also to the external circumstances, that are unfavorable to the administration of homœopathic medicine. To this latter

belongs especially the disobedience of the sick, and of the persons who have charge of the diet, who often have too little knowledge properly to attend to it, and are also frequently wanting in good will to follow the dietetic directions of the physician; not unfrequently, too, there is a want of moral courage, in continuing that which they have begun with good intention. May it not also be possible, that the physician himself, since he is but a man, may sometimes deceive himself, and select an unsuitable remedy? The inefficiency existing may also be charged, not so much to homœopathy, as to the unfavorable operation of external circumstances, which deduce nothing from her as a science. The idea that it is a poisonous practice, exists only in the heads of uncultivated or malicious men, and therefore merits no reply: and there is as little need to contradict the accusation, that her doses are equal to nothing; because a little familiarity with her principles, and some practical trials at the bedside of the patient, sufficiently refute this calumny, even if a satisfactory explanation of the operation of this law of experience were impossible. Should any one, nevertheless, be still dissatisfied, he may test it by administering larger doses, for the exercise of homœopathic practice is not bound by the doctrine of doses, but by the correct choice of remedies according to homœopathic principles; he may therefore traverse once more the same practice, which, if willing to be informed by the experience of others, he might have spared himself.

And thus nothing stands in the way of homœopathy, which can limit her further extension, or exclude her from the ranks of science, as neither dictatorial sentences nor celebrated authorities in cases, where investigation and calm proof are concerned, are of any value, or can be of the least hindrance. Opinions and theories, learned high sounding hypotheses, and disappointed attempts at explanation, are influential only, where laws derived from experience are opposed by experience, and avail nothing against an eternal truth resting on rock-founded principles; but, on the contrary, tend only to their greater consolidation, confirmation, and perfection, without inflicting the slightest injury on the inmost life of an immovable truth.

SECTION FIRST.

REGIMEN OF THE SICK DURING HOMŒOPATHIC TREATMENT.

The general rule to be observed is, that patients should partake of light, digestible, nourishing food, to satisfy hunger; and of such drink as nature requires to allay thirst; and abstain from everything of a medicinal or injurious nature.

In acute or febrile diseases, only the lightest and most simple kinds of nutriment are proper, *viz:*

Pure cold water in preference to all other drinks; or water with the addition of some sugar, raspberry or strawberry syrups, or quince and apple jelly prepared without spices. Barley-water, rice-water, thin oatmeal gruel, panada, gum Arabic water, whey, milk and water, preparations of arrow-root, sago, tapioca or the so-called "farina", which is nothing but wheat-grits without the hull; all these without any other seasoning than a little salt or loaf sugar, or one of the syrups mentioned.

Toast-water, provided the toast is made from stale bread, either home-made or from bakers who make use of neither potash, salæratus, or alum; the slices ought to be thin and thoroughly toasted, but not too brown, and never black. To make a good toast-water, pour boiling water on the toast while hot and let it stand.

Ice-water is often injurious and increases the thirst. The water, after being filtered if impure, should be cooled if possible without putting the ice in it. If this cannot be conveniently done, put a lump of ice in the water and take it out again as soon as the water is sufficiently cooled.

Most kinds of ripe succulent fruits, possessing little or no acidity, fresh or prepared by cooking, and eaten in moderate quantities; as ripe grapes, sweet apples, peaches, raspberries.

Most kinds of dried fruits; as apples, quinces, peaches, cherries, prunes, dates, figs, raisins, currants, almonds, &c.

All imported dried fruits, especially raisins, figs, &c., ought to be well washed before they are used, first in cold and afterwards in warm water.

Sweet oranges with a thick soft peel are allowed, but those having a thin, leather-like peel, and all decayed, spotted, and sour ones, ought to be avoided.

With regard to apricots, nectarines, plums, gages, watermelons, cantaloupes and cherries, the physician should be consulted.

No fruit whatever should be used in cases of colic, diarrhœa, dysentery or cholera.

When the more violent symptoms of acute disease have subsided, and the appetite calls for more substantial food, a wider range may be gradually taken in the choice of aliment, and all the articles used which are allowed in chronic or long-continued diseases, *viz:*

All kinds of light and not too fresh bread, and plain biscuit containing no potash, soda, alum, or other similar ingredients; cakes made of meal, eggs, sugar, and a little butter; buckwheat and other cakes not raised with fermenting powders; light puddings and dumplings of wheat, farina, wheat grits, rye, Indian meal, rice, oat-meal or bread, without wines, spices, or rich sauces; hominy, farina, Indian mush, groats and pearl barley, boiled with water, milk, or soup.

About using hot corn consult the physician.

Potatoes, turnips, carrots, beets, salsafie, artichokes, spinach, cabbage, cauliflower, green peas or beans; and in some cases also, tomatoes, egg-plant, asparagus, squashes, cucumbers, mushrooms, dryed peas, beans, especially lima-beans, lentils, millet, green rye, &c.

Milk, raw or boiled, fresh buttermilk, whey, milk posset; but care should be taken not to use milk from cows poisoned with slops from distilleries.

Ice-creams with the syrup of strawberries and that of other allowed fruits, and not flavored with aromatics nor colored with cochineal or other injurious drugs.

Pure plain chocolate or cocoa, and in some cases weak black tea.

Butter, free from any rancid or unusual taste, cream, cottage cheese, milk cheese, curds, and other simple preparations of milk, plain custards, pure sweet olive oil.

Raw or boiled eggs and egg-tea, except in diarrhœa.

Soups and broths of animal and vegetable substances elsewhere allowed, seasoned with a little salt only; beef tea, mutton broth, and chicken water after having been boiled for at least half an hour.

Beef, mutton, all kinds of tongues, venison and wild game, the lean part of ham, pigeons, chickens and turkeys; the latter only in the winter season and not in all cases.

Fresh perch, rock, sea-bass, and small creek fish; salt shad, mackerel and salmon after being well soaked or par-boiled.

Oysters, raw, roasted in the shell, or boiled in soup.

Salt, and also sugar or molasses, may be used, but always with great moderation.

Should any of the allowed articles of diet disagree with the patient, on account of some constitutional peculiarity, or the nature of the disease, they should be avoided by him, though perfectly wholesome for others.

The patient should not overload his stomach, nor oppress it with various or incongruous dishes. The demands of the appetite for solids are to be satisfied at stated and not too frequent periods, and at no other time.

Regularity in the time of eating is of great importance.

The diet of children at the breast should not be changed during their sickness; but in such cases, that of the mother should be regulated according to the preceding rules.

ALIMENT FORBIDDEN,

Unless especially allowed by the Physician.

The flesh of all young animals, and particularly veal; geese, tame ducks; the liver, lungs or tripe of animals, turtles, terrapins, eels, crabs, clams, old smoked salt meat, sausages, mince-pies, rancid butter, strong cheese, lard, fat pork, roast pig, fried oysters.

Food prepared from blood and much animal fat.

All highly seasoned soups, sauces, drawn butter, pepperpot.

Cakes prepared with much fat or with aromatics; pastry, pies, honey, and all kinds of colored confectionary; all kinds of candies, excepting rock and barley sugar.

All kinds of nuts and fruits not mentioned amongst the allowed articles.

Vinegar of all kinds, salads or cucumbers prepared with it; pickles prepared with spices or greened with copper; parsnips, parsley, celery, radishes, horse-radish, garlic, onions; all kinds of pepper, catsups, mustard, saffron, nutmeg, ginger, lemon or orange peel, vanilla, laurel-leaves, bitter almonds, peach kernels or peach leaves, cloves, cinnamon, allspice, fennel, aniseed, sage, thyme, mint, &c.

All kinds of distilled and fermented liquors; coffee and green tea: lemonade and drinks prepared with acids.

All natural and artificial mineral waters.

Colored toys, if the colors are not fixed, are on all occasions to be withheld from children.

All perfumery, particularly musk, hartshorn, camphor, baccioli, Cologne water, Eau de Luce, bay rum, or other aromatic waters, flowers used for their odor, cosmetics and tooth-powder must be avoided.

Tobacco, if used at all, should be used very moderately.

Every medicine, excepting those prescribed by the physician, ought to be avoided; not only all medicines procured at the shops, and all such as are empirical, but every description of domestic medicines, as all manner of herb teas, syrups, medicated poultices and irritating or medicinal substances applied to the skin.

Blood-letting by the lancet, or by leeches and cups, and laxative injections, except those of cold or lukewarm water, are likewise forbidden.

The cure is disturbed by cold or hot baths, especially baths impregnated with herbs, sulphur, and other medicaments.

Linen, cotton, silk or leather, worn next the skin, is prefer-

able to woolens, excepting for persons much exposed to the weather, or for little children.

The patient should, if possible, use moderate exercise in the open air for an hour or more daily; and his chamber should be well ventilated every day.

Recovery is frequently dependent on a good moral regimen.

Labor, which gives the mind the proper direction to usefulness, while it exercises the body, should be daily used in chronic diseases as far as the strength will allow of it.

Homœopathic medicines should not be taken too soon after eating; and for about half an hour after taking them the patient had better abstain from eating or the use of tobacco, and, if possible, from much mental or bodily exertion.

The medicines are to be kept in a dry and not too warm place, free from odors.

SECTION SECOND.

ADMINISTRATION OF HOMŒOPATHIC MEDICINES.

Every medicinal substance heals a determinate case of disease, therefore one ought never intentionally to interfere with another.

To obtain its peculiar virtue, each article must be given in a definite dose. I have observed with great circumspection and accuracy for years past the different views and assertions of old-school as well as homœopathic physicians in respect to the doses of medicine and their administration in diseases; and not merely observed, but have myself tested them, and have arrived at the firm conviction, that neither the lowest nor highest, but generally the medium grades of attenuation of homœopathic remedies, are the most beneficial; and after numerous experiments have returned to the conclusion, whence I had started at the commencement of my practice 30 years ago. And since the virtue and efficacy of every article depends on the degree of

attenuation, and its adaptation to the disease, I have with each article marked that which I have found, after long experience, to be most effectual, opposite the disease described. The more irritable the constitution of the patients, and the more severe the disease, so much the more speedily and powerfully does the remedy act; hence quickest in children, and proportionately in females, more slowly in adults, and most slowly in persons advanced in years. Therefore children require the most minute, adults the strongest, but the aged, being usually more feeble, require somewhat smaller doses than younger persons.

Each medicine, when clearly indicated in the existing disease, soon occasions a visible aggravation of the sufferings, but which is only the conflict of the remedy with the disease, soon passes off, and need excite no apprehensions whatever.

Most medicines will be most safely administered in the evening at bedtime, either in the dry state, or mixed with a little water. Some few articles are exceptions to this rule, and these operate more mildly and with less general disturbance when taken at another time of the day, which will be particularly specified under each medicine. With many remedies there should be no mental exertion for two hours after being taken, since the consequence would be injurious; nor ought anything to be eaten for two hours after taking the medicine, nor any remedy be taken for two hours after eating. And it is also inadmissible for the patient to read or be otherwise engaged after lying down.

But one dose of the medicine must be given at a time, and this must be allowed to operate, till the relief following the apparent exacerbation of the disease has ceased, or the symptoms return again, in which case the same article may be given the second, third or even fourth time. This rule always holds good, but has recently suffered some deviation, experience having taught, that in acute diseases the appropriate remedy may be repeated the more frequently, the more severe the complaint; for instance, in spasms from dentition in children, many active inflammations, affections like cholera, &c., it may be given every quarter or half hour.

In some cases, particularly in children and females, an aggravation of the disease does not always follow after administering the medicine, but a calm sleep and consequent relief. This sleep is on no account to be disturbed.

Occasionally a medicine causes immediate relief, without any previous exacerbation; more frequently, however, it is otherwise, and there is a slight increase of the disease followed by complete convalescence.

On the other hand, some few articles have occasional alternations; that is, they do not completely cure the disease, but excite new sufferings different from those already existing. In such cases, as soon as this state takes place, the remedy opposite to that first given is to be administered, which will be followed by complete recovery.

In some instances it is sufficient merely to smell the medicine. This is recommended particularly, when the pain is extreme, for instance of the teeth, the head, &c.; when excessive susceptibility of the nervous system requires to be soothed, when the patient's mouth, in fainting, cannot be opened; in violent vomiting, when the stomach is in a very irritable condition, &c., and generally in very irritable subjects, and diseases of a high grade.

In cases when the cause of the disease cannot be speedily removed, or violent and sudden symptoms occur, as in teething of children, for instance, the most minute doses should be given, which, if not instantly, yet soon relieve, and then should be exchanged for the next suitable medicine.

In some severe pains, the action of the remedy may be much aided and relief afforded, by rubbing the parts, most intimately connected with the one affected, with a woolen cloth, for instance the one foot and arm, when the other is affected, the nape of the neck, when the throat is affected; the back, when the breast suffers, &c. This is especially useful at the onset.

These principles will always be found suitable for laymen, in the treatment of inflammatory diseases.

SECTION THIRD.

ON THE PARTICULAR TREATMENT OF INDIVIDUAL DISEASES.

I shall endeavor in every instance to present *first* the case of disease, then the remedy and attenuations to be administered, afterwards, the many deviations and their appropriate antidotes; and in general communicate to the reader the experiments made at the bed of sickness since the publication of the former edition of this work—providing they do not enter too deeply into medical science, and consequently demand the presence of a thoroughly scientific homœopathic physician.

A.

A B O R T I O N,

See Miscarriage.

Abscess.

A collection of purulent matter, contained in a sac or cist in some part of the body, the result of diseased action, is termed an abscess.

There are two kinds of abscess, the acute and the chronic; the former is preceded by sensible inflammation in the affected part, which is speedily followed by suppuration. A boil is a familiar illustration of an acute abscess. When suppuration is about to take place, the character of the pain becomes changed, and is more obscure and throbbing; the swelling is increased; and after the matter is formed, and when the abscess is near the surface, there is perceptible fluctuation. Rigors or chills are also among the first symptoms which denote the commencement of suppuration.

When the abscess is matured, the tumour *points*, or some part of the cutaneous surface over it—generally about the centre—becomes more prominent; the skin over this spot gradually becomes thin, and finally bursts and allows the contents of the cavity to be discharged.

If the abscess be large and the discharge profuse, and kept up for a considerable length of time, hectic fever, and other signs of constitutional disturbance, generally ensue.

Chronic abscess is generally unattended by any of the symptoms which precede the formation of the acute abscess. Frequently its existence is not suspected until the attention is called to it by the swelling arising from the approach of the matter to the surface.

Treatment.—The acute abscess should be poulticed with warm bread and milk, or flaxseed poultices, and an occasional dose of *Hepar sulph.* or *Mercurius vivus,* administered for the purpose of hastening the process of suppuration. Opening the abscess with a lancet to evacuate the pus, will frequently shorten the period of the patient's sufferings, especially if it be extensive. The incision should be made at the most depending point, where this can be done with safety; when this is impracticable in consequence of the thickness of the parts between the matter and the skin, the most prominent part should be selected.

To accelerate the healing after the matter is discharged, a few doses of *Hepar* or *Sulphur* may be given; or, if the suppuration should continue for a considerable length of time, *Silicea* and *Mercurius vivus* will be useful.

In chronic abscess, the matter should always be evacuated as early as possible by means of the lancet, to prevent a large accumulation, and avoid the constitutional disturbance so likely to ensue from the inflammation following the bursting of the abscess.

The opening should be small, and at the base of the abscess. The medicines most useful in preventing or removing unpleasant symptoms, are *Mercurius vivus* and *Hepar,* or in some cases *Silicea, Calcarea,* and *Phosphorus.*

For induration and swelling of the *lymphatic glands,* situated in the neck, and under the chin and ears, *Mercurius solubilis, Dulcamara, Calcarea carb.,* etc., are the principal remedies.

Accouchment. Labor. Childbirth.

The act of birth, painful as it often is, belongs only to the natural phenomena of life.

Here I shall treat only of what is unnatural during this event,

and first of the *severe labor pains*, which mostly attend first labors in subjects of very frail constitution. Every contraction of the womb for the expulsion of the child, is painful, and cannot be prevented by medicine; but the too great sensibility of the female to pain, indicated by great restlessness and tossing in bed, and expressions of despondency, may be alleviated. In such instances a dose or two of the 3d atten. of *Coffea cruda* is beneficial. *Nux vomica* will be preferable, where the patient is much addicted to the use of coffee as a drink. If by this treatment the delivery does not advance, a dose of *Belladonna* 18. will soon bring it to a happy termination, especially when very strong labor-pains are accompanied with tight pressing pain in the whole abdomen, low down, with a feeling as if everything was being pressed out. Pains which are too weak require most frequently a dose of *Pulsatilla* 12., particularly when accompanied with great pain in the back, and painful cramps in the lower limbs. In entire cessation of labor pains, without any other complaint, I have often seen a speedy change effected after one or two drops of the *Tinct. of Cinnamon*. When the pains become less and less frequent and weaker, *Secale cornutum* 3d. is a remedy of the greatest importance. But if the pains suddenly cease, and alarming symptoms follow, such as trembling, drowsiness with snoring, &c. *Opium* is the best remedy to bring the diseased condition into a normal state. The *cramp-like pains*, which, without advancing the delivery, cause the highest degree of suffering, are often relieved by a dose of *Chamomilla*, which may be followed in half an hour by a dose of *Belladonna*, if the former has had no effect. But if there be cramps, with convulsive movements of the limbs or entire body, followed by stiffness of the body and loss of consciousness, and accompanied by a flow of bright red blood with every pain, *Hyosciamus* 6. is the most suitable medicine.

After-Pains.

These are painful, cutting contractions in the lower part of the abdomen, which occur after delivery, and often last several days,

particularly in very sensitive subjects. They are mostly met with in those women who have had several children, but seldom at first births. They are most severe while the child is at the breast. Usually these unnatural pains are attributable to a general irritability of the system, to a violent contusion of the womb, or even to wounds of the inner and outer sexual organs.

When the after-pains are inconsiderable, they may safely be left to nature, without medical interference; but where they are so severe, as to deprive the patient of all rest and sleep, *Chamomilla* should be given in the 3d atten. and will always be found useful. *Coffea cruda*, 3d atten. will be found beneficial when the patient complains that she feels as if all the bowels were being cut to pieces, and she cannot possibly endure them; and also in after-pains from excitement, from which the woman often suffers soon after delivery, and which annoys her exceedingly by preventing her from sleeping. But if the after-pains, as is frequently the case, are owing to contusion and compression, or laceration of the inner and outer sexual organs, there is no remedy equal to *Arnica* in the 6. atten.; which remedy may also be used externally in those cases in the form of a lotion, say five to ten drops of the tincture in half a teaspoonful of water, and rags wet therewith laid upon the parts.

I must here remind the layman, that a far more tranquil childbed state will be promoted, by giving immediately after delivery a dose of *Arnica*, with the understanding that no other important complaints require the administration of another medicine.

AGUE,

See intermittent Fever.

Amenorrhœa. Suppression of the Menses.

By this term is understood the sudden stoppage of the menstrual flow. This is frequently consequent upon some accidental cause, such as exposure to cold or dampness without a sufficiency of clothing, particularly of the feet; putting the feet in cold water; powerful mental emotions, &c. It also often occurs in the course of other diseases, especially those of the lungs, liver,

and uterus, in rheumatism, &c. In these latter instances the difficulty can only be removed by the cure of the primary disease, the appropriate treatment of which will be found under their respective heads.

Treatment.—The medicines which are chiefly valuable in sudden suppression from cold, &c., are: *Aconite, Belladonna, Bryonia, Pulsatilla, Dulcamara, Sepia, Sulphur, Lycopodium, Opium, Veratrum, Platinum, Graphites, China, Causticum,* and *Kali carbonicum.*

Aconite will have the preference when the affection arises from fright, and especially if there be congestion of blood to the head or chest, with redness of the face; giddiness, sick stomach or faintness; throbbing or acute shooting pains in the head, sometimes attended by delirium or stupor. When the suppression is occasioned by fright, this remedy should be administered immediately, and if not speedily followed by relief, or if the amelioration be but partial or temporary, it may be succeeded with benefit by *Lycopodium, Opium* or *Veratrum.*

Bryonia is most suitable for unmarried females, and will be indicated when the suppression is followed by a sensation of swimming in the head, with heaviness and pressure toward the forehead, aggravated by stooping and by motion; pains in the chest; dry cough; bleeding at the nose; bitter or sour eructations; pain in the pit of the stomach after eating; rising of food; pains in the small of the back, and also pains of a drawing character in the lower part of the abdomen; constipation.

Belladonna will be serviceable after or alternately with *Aconite* in plethoric subjects, when there is congestion to the head, bleeding at the nose, and for most of the symptoms mentioned under *Aconite* when the latter is insufficient.

Pulsatilla, however, is the chief remedy in this affection, and will afford relief in the majority of instances, especially when the suppression results from the effects of cold or chill by exposure to dampness, and the patient suffers from headache chiefly confined to one side, with shooting pains extending to the face, ears and teeth; palpitation of the heart; feeling of

suffocation; flashes of heat; nausea or vomiting; disposition to diarrhœa; pressure in the lower part of the abdomen; frequent desire to void urine, and leucorrhœa. It is best adapted to females of a mild, easy disposition, with inclination to melancholy and tears.

Sepia is also a valuable remedy in this disease, particularly in women of a delicate constitution; the suppression attended by sallow complexion or yellowish spots on the face; nervous headache, worse in the morning; giddiness; toothache; disposition to melancholy and sadness; great liability to catarrhs, especially after getting wet; pains in the limbs as if they were beaten; frequent colic and pain in the loins; nervous debility, and delicacy and tenderness of the skin.

Veratrum, if there be suppression with nervous headache; hysterical affections; frequent nausea and vomiting; pale, earthly color of the face; coldness of the hand and feet, or nose; great weakness with fainting fits.

Kali carbonicum, in cases attended by difficult respiration; palpitation of the heart; disposition to erysipelatous eruptions and paleness of the face, frequently alternating with redness.

Sulphur, against pressive headache chiefly in the back part of the head, extending to the nape of the neck, or one-sided head-ache, or pain over the eyes, with heat and throbbing in the head; heaviness of the head; confusion of the head; giddiness; dimness of vision; bluish circle round the eyes; pimples on the forehead and around the mouth, and red spots on the cheeks; voracious appetite, sour stomach; sour and burning eructations; fullness and heaviness in the stomach and abdomen; constipation, with ineffectual efforts to stool; disposition to hemorrhoids; sometimes loose, slimy evacuations; spasms in the abdomen; leucorrhœa; numbness of the limbs; great disposition to take cold; difficulty of breathing; pain in the loins; great depression after talking; fatigue and weakness of the limbs; irritability of temper, or disposition to melancholy and tears.

In cases of long standing, especially when occurring in debilitated subjects, *China*, *Graphites*, *Causticum*, *Natrum mur.*,

Conium, *Arsenicum* and *Jodium* will be useful in addition to *Sepia* and *Sulphur*.

Anger.

Violent anger often produces the most injurious effects on the human body, and even endangers life; and when it occurs but seldom, there often take place the most intolerable pains, spasms, jaundice, bilious fever, and similar affections.

The most usual symptoms, observed after violent anger, are the following: general heat, restlessness, trembling, heat, and redness of the face, and of the eyes; headache, which usually affects only one side of the head, and is attended with a sensitive pressing or squeezing; when it occupies the whole head, the pain is generally of a dull character; palpitation of the heart, bitter, bilious taste in the mouth, coagulating yellowish green saliva, fullness about the chest; choking, vomiting of green, bitterish fluids; cuttings in the bowels, diarrhœa, loss of sleep, thirst, &c.

The most simple and best remedy in these cases is three or four pellets of *Chamomilla* in the third attenuation.

But as chamomile tea is so commonly used as a domestic medicine for all possible cases of sickness, and is even daily used as an innocent drink, it is often inadmissible as a remedy, and if given, only aggravates the disease. In such cases a dose of the third attenuation of *Coffea cruda* will quiet all the sufferings.

But when, as is so commonly the case at present, chamomile tea or coffee are daily used as diet, and moderate vexation may induce the sufferings above mentioned: neither the one nor the other as a remedy can be of use, but for removing the sufferings, in most cases, *Nux vomica* in the dose of 4 to 6 globules, in 12th attenuation, should be given. There are also some cases, where this remedy alone does not suffice, but *Ignatia amara* or *Pulsatilla*, in the 12th attenuation, must be used.

Chamomilla possesses moreover, in the smallest dose, especially when there is excessive pain, or the mind is much excited,

the peculiarity of soothing it, and hence this medicine is highly beneficial against affections brought on by too great use of coffee.

Ignatia amara will be particularly serviceable in affections caused by anger, which are not manifested externally, but occasion silent chagrin, melancholy, or shame. In such case recourse may be had to from three to six globules of the 12th attenuation. On the contrary, if chilliness and coldness follow a fit of anger, and are very troublesome to the patient, *Bryonia* in the 12th attenuation should be given, and followed by *Nux vomica*, if the patient is very prone to anger.

Pulsatilla, in a like dose with *Ignatia*, is indicated, when vexation frequently arises from trifling causes, and *Chamomilla* alone is found insufficient. It shows itself decidedly beneficial when these cases occur in very sensitive, irritable, complaining, weakly and extremely pale subjects; and the onset is marked with very moderate heat, or general chilliness, and headache. Also when the following symptoms are present, there is no medicine so suitable as *Pulsatilla:* aversion to food, bilious eructations or belchings, in the evening; bitter taste after vomiting food, especially in the evening; green, bilious-looking loose stools, particularly at night, which are preceded by rumbling in the bowels, and intolerable, depressing sense of heat during sleep. On the contrary, if the anger be connected with just cause of displeasure, and be settled in indignation, in abhorrence of what was done; or if the patient hurl from him whatever is in his hand, &c., *Staphysagria*, 12th attenuation, should be given.

If with the anger an excessive feeling of anxiety is manifested of which the patient had shown no previous signs, a dose of *Arsenicum album* will soon relieve him.

Anger combined with Fright.

In these cases I give precisely the same remedies, as against the different symptoms above enumerated, according to the respective indications. But none of the articles mentioned will radically cure affections occasioned by anger and fright together. If both these simultaneously attack a person, and it is designed

to obviate their injurious effects, *Chamomilla* is not the antidote of anger, nor is opium capable of annulling the effects of fright; but the article capable as well to quiet the undue excitement of the nervous and vascular system, as to remove the totality of symptoms resulting therefrom, is four to six globules of the 12th attenuation of *Aconitum napellus*. If this medicine alone does not relieve the sufferings, *Bryonia* will occasionally succeed, especially when chills alternate with fever. *Veratrum* is likewise useful here if, together with chilliness, there is also an indescribable feeling of anxiety.

Anus, Itching of the.

A very troublesome itching interiorly in the rectum, or outwardly about the anus, which is increased on going to stool, sitting, riding, moving about and after stimulating food, and often accompanied with a more or less severe, pressing, drawing, sticking, biting, or burning pain, also with varices (knots on the veins).

The disease thus described depends on a disordered condition of the hæmorrhoidal vessels, and requires for its entire removal a longer treatment than a layman can undertake; and the patient must have the advice of a prudent, intelligent homœopathic physician. If he determines on this, he should not make use of the palliatives here recommended, without informing the physician; he should only use them, when the sudden attack of this annoying itching and severe pain compel him so to do.

Nux vomica is among the best medicines, provided coffee and spirituous drinks are avoided, when this complaint is brought on by eating too freely, by stimulating drinks, such as wine, brandy, &c.; also when great mental exertion, sedentary habits, long continued compression of the bowels, favor its origin, or when it has been caused by costiveness, worms, and particularly ascarides; and finally, when the pressure of the gravid uterus on the vessels of the abdomen occasion it. If patients complain of having knots on the veins of the rectum called piles, with burning, sticking pains; if they have a feeling of constriction in the

rectum, and complain of a narrowness of the latter on evacuating the feces, connected with the itching, and with dull stitches in the small of the back and sacrum; if, on the slightest motion of the body, a pain as from a bruise is felt in the loins, which makes them cry out, and allows them to stand and walk only in a stooping posture: this medicine in the dose of three to six globules in the 12th attenuation is the most suitable.

When there are hæmorrhoidal tumors which occasion not so much a troublesome itching as a constant severe burning, in connection with loose stools, great benefit will be derived from *Capsicum annum* in the 9th attenuation. *Arsenicum album* is also exceedingly valuable in removing burning pains of a similar kind about and in the anus on going to stool, especially when the stools are very watery; it is serviceable, too, in cases of great emaciation and debility, and especially if there be sudden sinkings of the system. This medicine is to be given in the dose of from two to four globules of the 18th attenuation.

This burning is often so violent that fever is induced, which is intolerable on account of restlessness and anxiety, sleep disturbed by frights, tossing about, fearfulness, burning heat, on lying, as well as every other position being attended with inflamed hæmorrhoidal knots excessively painful. In such cases I have seen *Aconite* in the 12th attenuation repeated every two, three, four, and more hours, give the greatest and most speedy relief.

For alleviatingt his troublesome itching, and burning pain about and in the anus, the patient may apply externally without injury to the action of the internal remedy, a solution of quince-seed in water, or a suppository of *Cocoabutter*. With the first the rectum should be bathed several times a day, and a piece of the latter about as long as one joint of the finger, and a little pointed, may be introduced into the rectum.

Were sufferers with this disease to bear their pains with patience, in order to enjoy relief of so much the longer duration, they would find in *Sulphur* the certain remedy for the following symptoms: constant urging and pressing to go to stool, sometimes diarrhœa with bloody evacuations, attended with a

pungent sensation of rawness about and in the anus: the tumors of the vessels (piles) itch, burn, ooze moisture, occasion a pressing sensation in the rectum, are liable to come down; and are accompanied with severe, pungent pain in the loins, with stiffness and a pinching sensation as if the parts were too short. The most suitable dose is three to six globules in the 18th attenuation.

But if the itching depends on the small, seed-like worms, called ascarides, other remedies must be resorted to. The ascarides are found only in the rectum, mostly about the margin, seldom high up, and by creeping out and in cause a troublesome itching and tickling, severe burning, chiefly in the evenings, discharges of mucus and blood from the anus, vagina, and bladder; also straining to make water, &c. Depression of spirits, melancholy, tearfulness, &c., are common symptoms. These worms are very active, mostly white, two or three lines long, and very much resemble the skippers in cheese. They may generally be observed in the stool, and are most apt to effect children. I have with great advantage given as a remedy two or three globules of *Ignatia* in the 12th attenuation, repeated every other day. If after eight days the sufferings return, it may be alternated with *Valeriana*, 6th, and both remedies given alternately every other day. But if a reasonable trial do not succeed, a weak infusion of *Valeriana* as a lavement is occasionally of service. And if all these means prove fruitless, then will *Sulphur* and *Calcarea carbonica*, 18th, alternated every fourth day, most probably be found effectual.

Aphthæ. Thrush. Sore Mouth.

This disease commonly makes its appearance about the second or third week after birth, and commences by the formation of small, round, white vesicles, which are at first isolated and scattered over the tongue and interior of the mouth; and if not soon checked run together, forming patches, which sometimes become ulcerated and cover the whole of the mucous membrane of the mouth, and in severe cases extend to the throat. Though not dangerous, this affection is often painful to the child, and pre-

vent suckling. It may also be communicated to the mother, and cause soreness and excoriation of the nipples, &c.

The disorder is frequently owing to some constitutional taint, and consequently we often find it attacking every child in some families, while other families always escape it. It is most generally, however, produced by want of a proper attention to cleanliness. The use of improper food also gives rise to it; and hence children raised either partially or wholly by hand, are more liable to this affection than those who are nourished exclusively by the mother's milk.

In the treatment of aphthæ, *Mercurius vivus*, *Sulphur*, and in some cases *Arsenicum*, will be required. The mouth should be well washed several times a day with cold water.

Mercurius vivus should be given two or three times a day, when the disease first makes its appearance, and also in cases where there is much salivation, and the thrush indicate a tendency to ulceration.

Sulphur should follow *Mercurius vivus* when the latter fails to effect a cure after having been continued for a few days.

Arsenicum will be indicated in bad cases, the two preceding remedies having failed to check the disease, and the aphthæ assume a livid, or bluish appearance, attended with great weakness and diarrhœa.

Bryonia and *Nux vomica* may also be useful in some cases.

A common remedy in old-school practice, and one which is homœopathic too in many cases of the disease, consists of powdered borax and loaf sugar mixed in equal parts and applied to the mouth of the child, three or four times a day. Or a few grains of the borax may be dissolved in a teacupful of water, and the mouth of the child washed with the solution two or three times a day. This remedy should not, however, be continued too long, lest it prove injurious by aggravating the disease.

Apparent Death (Asphyxia) of New-born Children.

This condition of new-born children, observed immediately after birth, is generally caused by the drawing of the navel-string tight

round the neck by the long detention of the head, and at times also by tedious labors. The following are the symptoms by which it may be recognized: The child's face is very red, bluish brown or black, and swollen; the eyes thrust forward, the body warm, red, with blue spots here and there; the vessels of the cord puffed up, often visibly pulsating, and pulse still to be felt; there appears to be a general congestion of blood, and often the head is pressed out in length.

The second form of apparent death, which occurs after premature births, and great flow of blood from the womb during gestation and labor, differs from the first by the following signs: The whole body is pale, flabby, weak, not duly perfected, the face wan and sunken, the lips blue, the lower jaw hanging down, the limbs cold, the pulse not to be felt, and general signs of weakness and emptiness.

In neither of these states ought the child to be immediately separated from the mother; the mucus must be cleared from the mouth, the body rubbed, particularly the breast, with warm cloths, but the soles of the feet and palms of the hands with a moderately stiff brush; drop also on the pit of the stomach one or two drops of vinegar, and gently rub it in with the warm hand. But if the navel string has been cut, sprinkle the child with cold water, or force a few drops of it by a syringe, from a height of two or three feet, on the pit of the stomach. If all these means fail, the warm bath should be tried, while all the other efforts are to be repeated.

It is hardly to be supposed that these trials are to be made at once and indiscriminately, but singly and with suitable perseverance. If signs of reanimation appear, these external means must gradually be withdrawn, but so that they may be renewed from time to time, till the breath is restored and regular. The first signs of life are: weak twitchings and tremors about the mouth, hardly perceptible contractions of the muscles of the breast, returning warmth and redness of the lips, motion of the froth about the mouth, and finally audible breathing.—When life is restored, one or two globules of *Aconite* may be laid upon

the child's tongue, especially in the first form. In the second, on the contrary, one or two globules of *China* is preferable.

Apparent Death (Asphyxia) from vapor of coal.

The use of firepans in sitting rooms and bedchambers, the too sudden closing of the stove-valves, and badly constructed chimneys, are often the causes of apparent or real death.

If, in a person in this unfortunate situation, there be perceived natural animal warmth, twitchings of the muscles and eyelids, &c.; if involuntary evacuations of urine or fœces have not taken place, and the muscles are not yet rigid or stiff, there is still hope of resuscitation. The unlucky patient must be placed as soon as possible in a pure atmosphere, the best is the open air; but when this is impracticable, for instance in narrow streets, or the weather will not permit, let a draught of air be invited by opening the doors and windows; he is to be undressed, and placed in a position so as to have the head elevated, and his face and whole body is to have cold water sprinkled or poured upon it, and immediately rubbed and brushed without intermission. It is equally proper to force cold water by means of a syringe at some distance, on the face and pit of the stomach, and then wash with vinegar. But inflation of the lungs is also at times necessary, with lavements of water and vinegar, holding to the nose sweet spirits of nitre, sal ammoniac, vinegar of naphtha, and the administration of magnetism.

APPETITE, WANT OF.

See Stomach depraved.

Apoplexy.

Against the premonitory symptoms of this complaint, such as great inclination to sleep; general feeling of dullness or heaviness; dimness before the eyes; buzzing in the ears; hardness of hearing; heavy, profound sleep, and stertorous breathing; frequent yawning, and fatigue after the least exertion; acute pains in the head; vertigo or giddiness; fainting; irritability of temper; loss of memory; forgetfulness of words or things;

acuteness of vision or double vision; difficulty of swallowing; numbness, torpor, or pricking sensation in the extremities; congestion of blood to the head, with beating of the temporal arteries; red face, quick, full pulse, &c.; the following medicines have been used with most success: *Aconite, Belladonna, Ignatia, Pulsatilla, Lachesis,* and *Nux vomica.* Some of the most prominent symptoms for the choice of these, and also other remedies, which may sometimes be required, will be found under "Congestion of Blood to the Head", which see.

Aconite, in all cases in which there is congestion to the head, with full, quick pulse; red face; throbbing of the arteries of the neck and temples, &c.

It may be given twice a day.

Belladonna, after *Aconite,* should the latter be insufficient to remove the symptoms of congestion.

Nux vomica, against threatened apoplexy in persons of sedentary habits, and those addicted to the use of stimulating drinks, or to too great indulgence at the table.

Pulsatilla, in persons of mild disposition, and especially in females.

In the treatment of the disease itself, *Nux vomica, Lachesis, Opium, Ignatia, Belladonna, Arnica,* and *Pulsatilla,* have proved most serviceable.

The disease, however, is one which assumes such a variety of forms, and is so dangerous in its character, that the greatest attention and skill are required on the part of a physician to conduct it to a successful issue. The limits of this work will not admit of a more extended notice of the disorder; nor, indeed, is that necessary, as the treatment should in all cases be under the management of a homœopathic physician.

Arsenic, poisoning by.

White arsenic is the most terrible and destructive poison to the human body. The symptoms, which however are not the same in all subjects, are the following: Burning in the throat, nausea, choking, incessant painful vomiting; burning pain in

the stomach and bowels, which is intolerably aggravated by taking food or drinks, insatiable thirst, dry tongue, distention or retraction of the abdomen, black, very offensive stools, depressed or irregular slow pulse, palpitation of the heart, fainting, occasional burning over the whole body like fire, at times icy coldness, cold sweat, laborious breathing, red or bloody urine voided in small quantity, change in the expression of the countenance, bluish yellow circles about the eyes, swelling of the whole body, with bluish water blisters on the skin; loss of strength, delirium, convulsions, and finally paralysis, insensibility, and death. These symptoms may be induced by the vapor of arsenic, or by the imprudent use of articles prepared with arsenic, for instance colors for painting toys, or straining variegated paper, such as mineral-, Swineford-, Vienna- or Paris-green, king's-yellow, &c., skins of stuffed beasts, &c.

In such cases, the most speedy treatment is necessary, and those who live at a distance from a physician will be glad to be made acquainted with the most suitable means of giving relief. I consider the admission of this article into the Domestic Physician so much the more appropriate as the remedies best adapted to all such unfortunate cases, may be kept in every family, and used without harm.

The first thing to be done is, to excite prompt vomiting, or to promote that which has already taken place. For this purpose the patient must drink plentifully of lukewarm water, containing some drawn butter, sweet oil, or sugar, and at the same time the throat may be tickled with a feather. This should be followed by lukewarm, mucilaginous drinks in large quantity, such as rich milk, oatmeal gruel, water thickened with white of egg, &c. If even these drinks should still be vomited up, and when the pain, choking and vomiting have abated, let this treatment be continued several days. The practice of *Hahnemann*, in cases of poisoning by arsenic, was, immediately at the onset: to dissolve a pound of scraped soap in four pounds of hot water, and give a teacupful, lukewarm, every three or four minutes. Next, whether the bowels were confined or loose, a clyster every hour,

consisting of milk or oatmeal gruel, or an infusion of bruised flax-seed mixed with plenty of oil. Lately the *Hydrated Sesqui-oxide of iron* has been recommended as the best antidote. It is to be obtained at the apothecary's. When the poison has been chiefly counteracted, the remaining complaints will generally be removed by a dose of *Hepar sulphuris* every 24 hours, alternated with *Ipecacuanha*. If, however, all the morbid symptoms are not removed by these remedies, *China* and *Veratrum*, alternated every six hours, will mostly suffice for their removal.

ASCARIDES.

See Itching of the Anus.

Asthma. Spasms of the Chest.

This malady often comes on so suddenly, and depends on so many causes, the operation of which can neither be foreseen nor guarded against, and comes as well in the form of a continued as of an inflammatory and short-lived disease, that a reference to its treatment in the latter cases, which though not always dangerous, are highly distressing, may not be out of place.

1. In hypochondriac and hysterical persons, and those who suffer from a general morbid sensibility of the nervous system, who are thrown into this state by circumstances of a trifling nature, such as a surprise, &c.; and in which a sudden sensation of constriction is felt in the windpipe, as if the fumes of sulphur had been inspired, the chest feels contracted or narrowed, so that breathing is accomplished with difficulty, and by short inspirations, anxiety and restlessness, extreme irritability of the nervous system, especially as to noise; loud wheezing, and weeping, chills alternating with flushes of heat over the whole body, and perspiration; *Coffea cruda*, 3d, provided the patient has not been in the daily habit of using it, should be given. But in cases where coffee is habitually used, *Aconite;* which, if relief is not obtained in 36—48 hours, may be followed by *Moschus*, 3d.

Often also in spasms of this kind *Pulsatilla*, 12th, is serviceable, particularly in persons of phlegmatic temperament, who are of a mild disposition and given to grief; in females who menstru-

ate irregularly and with pain, and when the symptoms are aggravated with frequent constriction of the chest, and short cough after eating, particularly after supper; constriction of the throat in a horizontal position in bed, when the attack comes on in sleep, occasionally with headache tearing through the eyes, crawling on the tongue, cold feet, cold perspiration of the feet, and much belching.

In robust, strong, plethoric persons, with ardent temperament, *Nux vomica*, 12th attenuation, is found to be more beneficial. This latter medicine suits also, where by motion and rising in the morning, and getting into bed in the evening, an attack of suffocation is experienced, and the patient is obliged to sleep in a sitting posture; the symptoms are worse after midnight, with dry cough, affecting the head and abdomen, also loathing of food; rough, dry and foul taste in the morning, heartburn; a feeling as if the joints were too closely put together, a pressive sticking pain in the region of the liver, stools infrequent and hard, shunning the air, disinclination for exercise of mind, and the patient feels worst in the morning early. *Aconite* is the most suitable remedy when congestions of blood, plethora, suppressed discharges of blood, &c., are the exciting causes, and are followed by oppression and stitches in the chest, short dry cough, general increased heat of the body, perspiration on the forehead, redness of the cheeks, and by an implacable perversity of mind, great impetuosity of temper, impatience, and frequent full pulse. This remedy may be repeated every half hour or hour. It is also indicated when the attacks are brought on by fright.

Bryonia alternated with *Nux vomica*, when the patient, when free from an attack can lie readily on the right side, but after the accession of a paroxysm can lie only on his back; when there is cough with expectoration of mucus and inclination to vomit or even vomiting, pain under the short ribs, belching with taste of food, costiveness, fretfulness, irritability, propensity to quarrel and bluster.

2. In asthma or spasms of the chest arising from vexation, and presenting the following symptoms:

A feeling as if the heart were about to be forced out, sense of

constriction, as if the chest were pushed inwards, with difficult inspiration; catarrhal stricture of the neck and chest, with constant inclination to cough arising from the pit of the stomach; a dose or two of *Aconite* will be most serviceable, and may be followed if necessary by *Chamomilla*, 3d. The latter medicine is also suitable in the so-called catarrh on the chest of children, with constant tickling in the throat, rattling in the upper part of the windpipe and in the chest, violent cough, often in connection with convulsions and pain in the bowels. In those spasms of the chest, which follow a fit of anger in persons who are not inclined to break out in violence or to act rashly, but who conceal their chagrin within themselves, *Ignatia*, 12th, is the most suitable remedy.

3. When the following symptoms occur:

Spasms of the chest with dizziness and a feeling of weakness in the head when lying on the back, which is relieved by sitting up; tightness of the chest towards evening with inclination to sleep but which is prevented by the spasms, cramplike constrictive tightness of the chest with agitation of blood, palpitation and heat of the heart, on taking a deep breath it seems to strike against the lower part of the chest, a sensation as if it could not be further expanded, *Pulsatilla* in the 12th attenuation should be given.

4. *Ipecacuanha* is indicated against the following symptoms: Occasional discharges of water from the mouth, with nausea before, and vomiting, mostly of bile *during or after the attack;* dry cough, excited by a tickling commencing in the upper part of the throat and extending to the extreme branches of the windpipe, with anxious, melancholic or morose state of mind, disposition to find fault with everything and everybody, cramplike constriction of the chest, with panting respiration and paleness of face, anxious gasping for breath and fear of suffocation; cold hands and feet; rattling in the windpipe, as if from mucus which moved up and down in breathing; a sensation as if one were in a cloud of dust and could not breathe for it. This remedy may be given in the 3d attenuation either one drop in

water or in the form of globules; children and sensitive females will be relieved by smelling it merely. It may be repeated every two or three hours, as its action is soon over.

Sudden attacks of Asthma in children.

Although it is not advisable for one unacquainted with medicine to undertake the management of this complaint, yet it appears to me to be proper, to point out the best mode of mitigating the violence of an attack, previous to the arrival of the physician. This is the more necessary, since the complaint commonly comes on in the night and very unexpectedly.

As soon as the first symptoms are observed, which usually consist of a sudden waking up of the child, with anxiety, dull, hollow, dry cough, want of air, and a shriek, expressive of fear of suffocation, give the patient two or three globules moistened with the undiluted Tincture of *Sambucus nigra*, particularly if the attack is accompanied by general dry heat, except of the face, which, with the hands and arms, is puffed up and blue, with anxious tossing and throwing about of the arms, drowsiness without the ability to sleep, irregular, small, intermitting pulse without thirst. By this the most imminent danger may be obviated at least for a time, till further means can be resorted to.

Mesmerism has also been highly recommended in this affection, especially when occurring in children, and the attack is sudden and violent. It should be applied by passing the hands briskly over the head, neck, and whole body to the soles of the feet. A few passes will sometimes allay the nervous irritability and the patient will fall to sleep; thus time will be gained for summoning the physician.

ASIATIC CHOLERA.

See Cholera.

B.

BACKACHE.

See Loins, Pain in.

BIRTH.

See Accouchment.

BIRTH, PREMATURE.

See Miscarriage.

Bleeding at the Nose.

A moderate loss of blood in this way requires little medical aid, but when it amounts to a real hæmorrhage, and occurs in weakly persons, children, or young girls, it may become dangerous, and render necessary the use of remedies.

Where bleeding at the nose depends on general excitement of the vascular system, and the pulse is found to be very full and hurried, and there is a rush of blood to the head, two or three globules of the 12th attenuation of *Aconite* will be of service.

When a tickling in the forehead and at the nose, as from an insect, precedes the bleeding, the nose is hot, and the blood flows in a stream, and is of a bright red color and commonly in male subjects, *Arnica* is of special use. This is also, the best remedy in injuries of the nose by a knock, fall, bruise, &c., and should be given internally and applied outwardly. Thus in most cases of bleeding at the nose it may be considered the most efficient remedy.

On the contrary, if it occurs in females who have already menstruated, but very slightly and in shorter time than when in sound health, especially in mild, gentle temperaments, *Pulsatilla*, 12th attenuation, is most appropriate.

In very irritable, susceptible persons, hypochondriacs and hysterial women, where the whole vascular system is in agitation, with general heat, and a thick dark blackish blood is mostly discharged, *Crocus*, 3d attenuation, two or three globules, or a drop in a teaspoonful of water is to be preferred.

When the blood coagulates as it flows, and hangs in clots; and

also in children and persons who are predisposed to inflammations, *Mercury*, 6th attenuation, will be found most serviceable.

About 24 hours after the cessation of the flow, it is advisable to give *China* in suitable attenuation, in order to prevent its return.

BLEEDING OF THE GUMS.

See Scurvy of the Mouth.

Blood, Spitting of.

By this term is to be understood the throwing off from the chest, by coughing, pure blood, or blood mixed with mucus. Sometimes the discharge comes on suddenly without any premonition; at others it is preceded by some or all of the following symptoms: constriction, oppression, tightness, rising heat or ebullition in the chest, with difficult breathing, palpitation of the heart, anxiety, and short dry cough, attended with a peculiar bloody taste. Finally, the coughing up of blood comes on and continues for a longer or shorter time, and with longer or shorter intermissions.

For the prompt removal of these symptoms, two remedies, *Aconite* and *Arnica*, will often be found suitable, the first particularly when there is determination of blood to, and agitation, and a feeling of fulness in the chest; palpitation of the heart, anxiety and restlessness; it should be given every hour or two in the 6th attenuation, till relief is obtained. But if this is not soon manifest, and the coughing of blood continues and threatens a rupture of the more important vessels of the lungs, *Arnica* must be resorted to, and should be given in the 3d attenuation, and repeated every two or three hours. This remedy is also suitable, when the coughing of blood is occasioned by external violence, by lifting heavy weights, &c., also in painful expectoration of blood without much effort; and when the clear blood is mixed with clots and mucus, accompanied with feeling of tightness and burning in the chest, pain as from a bruise in the shoulder blades and back, prostration of strength and faintness.—In frequent returns of this disease, with constant taste of blood, mode-

rate cough and expectoration of mucus, *Ipecacuanha*, 3d, every two or three hours, is an indispensable remedy. *Hyoscyamus* i indicated, when dry cough, constant tickling in the throat, and cramps are present.—*Arsenicum*, 30th, will be appropriate if after the remedies above recommended, the feeling of anxiety, agitation and palpitation continues, and the attack is apt to come on at night, particularly about midnight.

In this disease it is indispensable that the greatest bodily quiet, in the horizontal posture, be preserved; the chamber should also be cool, and the use of cooling, but not ice cold, drinks allowed. The most suitable are water; a little sweetened raspberry juice; almond emulsion, made of sweet almonds, and prepared with a little sugar and white of egg; and water.

This malady, when of frequent occurrence, is highly dangerous, in as much as it readily induces consumption; therefore the timely advice of an experienced physician must be sought.

Blood, Vomiting of, (Hæmatamesis).

The introduction of so acute a disease into this work will require no other apology than, that when the physician resides at a distance, it may end fatally before he can be had. It is therefore proper to trust the laity in some measure with the necessary remedies.

The name of this disease sufficiently indicates what is understood by it. Vomiting of blood makes its onset in repeated attacks, and the patient is always able to foretell its approach, by a gradually increased fulness about the pit of the stomach, a feeling of weakness, and a sensation of warmth about the heart, all of which announce it. The vomiting is accompanied by sickness, pain in the stomach and fainting, and all food, without exception, is again thrown up Not unfrequently, also, there is a discharge from the bowels of coagulated, black blood, which is commonly connected with colic pains, diarrhœa, or costiveness. —After an attack of this kind, the patient is left very much exhausted, even to fainting, and has cold sweats.—The exciting causes are especially: the too free use of stimulating drinks,

suppression of menstruation in females and of the discharge of piles in men, and external violence in the region of the stomach or abdomen.

One of the principal and most efficient remedies is *Nux vomica*, particularly in plethoric subjects, and such as have suffered from costiveness, and for a long time from disordered stomach and bowels, attended with violent vomiting.—If, after giving this remedy, the next attack is less violent, it serves to show that it has been well chosen, and that its repetition is called for at the next onset. But on the contrary, if the next attack should be more severe, *Arnica* will be most suitable, especially if the vomiting is occasioned by external violence on the abdomen. Where the disease arises from internal causes, let *Nux vomica* and *Arnica* be alternated as often as it becomes worse. If there have already been several attacks, and the patient has become weak, and pulsations at the pit of the stomach, nausea, belchings, and coldness of the body, indicate a fresh attack, *China* is indicated. On the contrary, *Hyoscyamus* is preferable, when the disease has been brought on by cold, the blood thrown up is of a brighter red, there is a rush of blood to the head and chest, and spasmodic sufferings.

Regimen: A horizontal position, cool apartments, free draughts of cold spring water, and buttermilk.

Once more I earnestly recommend, to send immediately for a physician; as the directions here given are only for cases of emergency.

Bloody Urine.

What is to be understood here, is sufficiently plain from the name; I mean by it that condition, which requires no previous examination of the urine, but where every drop which issues from the urethra, is mixed with blood; and which is often the result of external violence to the bladder or urethra, such as a push, fall, bruise, &c., in which case *Arnica* must be given in repeated doses internally, and the parts bathed with it externally. On the contrary, if the complaint arise in consequence of

excessive indulgence in spirituous and stimulating drinks, *Nux vomica* is the appropriate remedy. When the cause is not apparent, *Tinct. sulph.* should be given, especially if there is reason to suppose it is owing to hæmorrhoids. *Ipecacuanha* is one of the chief remedies in this disease, where no particular exciting cause can be discovered, and no special concomitant symptoms show themselves. It may be taken three times a day, and will often remove the disease in a few days.

Boil (Furunculus).

This is a hard, dark red, very painful, pointed inflammatory swelling, located in the cellular membrane, and varying from the size of a hazle nut to that of a pigeon's egg, exceedingly difficult to dissipate, and often suppurates speedily, without becoming remarkably soft. From the point of such tumor a very little matter issues, at first mixed with blood, but in the centre there remains for some time a core of thick and tough matter. After this is discharged, there comes from the bottom of the boil, a little thin matter, followed by abatement of the pain, and the gradual disappearance of the tumour. Occasionally also the redness and pain is lost in the remaining hardness and swelling, which always give occasion for a renewal of the boil. The accompanying pain then is pungent, especially on being touched, as is often the case with abscess.

The best remedy is *Arnica*, 3d attenuation, one drop in water, or four to six globules three or four times a day. In this way boils are prevented on persons, who are very subject to them, by frequently repeated doses of *Arnica* at suitable intervals, perhaps every eight or twelve hours, thus obviating their future recurrence. Occasionally also, where *Arnica* has failed, *Belladonna* is serviceable in the 12th attenuation.—Where there is a peculiar liability to the return of boils, through an inherent chronic predisposition, it is very often removed by *Tinct. sulph.* repeated every six days. Against ill-conditioned boils, threatening to run on to mortification, *Arsenic*, 30th, is the chief remedy.

Brain, Inflammation of the.

I could not for a moment think of committing to the hands of the layman the treatment of a disease, so fraught with danger as inflammation of the brain, and which often assumes such different forms. It is only my design to point out to him the most constant signs, which will acquaint him in time with his imminent danger, so that he may not be too late in seeking the aid of a physician, by which alone a happy issue can be brought about.

The most prominent symptoms of inflammation of the brain are: heat of the head with simultaneous coldness of the limbs, shining red, puffed face, redness of the eyes, great irritability of the organs of sense, deafness, drowsiness, delirium, and numerous spasmodic symptoms. In children there is generally a constant boring of the head into the pillow; great intolerance of odors and of bright light, or they lie quite still, with a very red and swollen face, visible pulsation of the arteries of the head and neck, motion of the lips as if about to speak, and snatching about with their hands. And there is likewise excessive burning heat over the whole body, without any remarkable thirst. The premonitory symptoms of inflammation of the brain are not constant, and may just as readily indicate the onset of another disease. They are as follows: rush of blood to the head, altered state of mind, hastiness, anxiety, &c. Yet there often appears in this disease a sudden succession of chill, heat, restlessness, tossing to and fro, severe pain and heaviness of the head, and all the signs of congestion of the brain. The affection increases rapidly, and soon passes into unconsciousness, in which the patient often moves his hand to the head, and delirium soon follows, which is at times furious, at others mild. In children it often commences with unusual and uncontrollable weariness and headache; the child is peevish, lets the head droop, or leans it against something, wishes to lie down constantly, and only on one side, or with his head low; if questioned, does not answer at all, or after hesitating a long time; these symptoms are often accompanied by vomiting, constant inclination to sleep, delirium, twitching of the face, &c.

If the layman is desirous of doing something before the physician arrives, let him, if there be much heat, give a dose of *Aconite* every two hours, by which not only the congestion of blood to the head and fever, will be moderated, but the physician as soon as he arrives will be prepared to administer another suitable remedy. If, however, the arrival of the physician should be protracted by unforeseen and unavoidable events, and the disease is unchecked, and becomes heightened, other suitable remedies will be found under the title of "Congestion of blood to the Head". *Belladonna*, in a high attenuation, is commonly the best remedy in inflammation of the brain, a few globules of which should be given every four or six hours.

Inflammation of the brain, from exposure to the heat of the sun, occurs with us less frequently than in hot climates; it is most speedily and certainly cured by frequent small doses of *Camphora*, providing the symptoms do not yield to *Belladonna*. Still I would caution the lay-reader, against giving any medicines in this form of disease, except *Aconite*, unless it be a case of the greatest necessity.

Breasts, gathered.

The breasts are often treated very indiscreetly, especially at the time when they assume a greater activity, a higher life as it were; I mean the time after delivery, the period of suckling and of weaning. During the period of suckling or nursing it frequently happens, particularly in the beginning, that the milk ceases all at once, which may be of serious consequence, not so much to the child as to the mother, inasmuch as a translation may take place to the abdomen or brain, which often endangers life. To prevent this, it is highly important to endeavor to bring back the suppressed secretion of milk; which will be in most instances accomplished in a short time by a few doses of *Pulsatilla*. If taking cold in the breasts give occasion to the check of milk, *Dulcamara*, 8th attenuation, is to be preferred. A sudden recession of the milk, however, in lying-in women, where no cause can be assigned, and which is followed by a violent

burning heat with great thirst, redness of the cheeks, and congestion to the head, demands the administration of *Belladonna*, which, if no alleviation takes place, may be repeated in three or four hours. It is likewise serviceable when the secretion of milk is checked by taking cold, by a knock or bruise, anger, fright, &c. If followed by hardness, and suppuration takes place, it is altogether wrong to make use of wet herb poultices, and softening plasters, of butter, and the like, by which the breasts are generally made worse, as well by the dampness as by the liability to take fresh cold in changing the poultices. I shall therefore specify the homœopathic remedies acknowledged to be specific in these cases, and at the same time direct what length of time must elapse before a new medicine may be given.

One of the most common complaints at the beginning of nursing, and which often gives occasion to too early weaning, is an excoriation and chapping of the nipples. The efforts of the child in sucking constantly tears open the sore afresh, causes it to bleed, and prevents it from healing. By degrees complete suppuration takes place, in consequence of which the nipples are sometimes totally destroyed, and the mother becomes partly or entirely incapable of resuming the duty of nursing. All the vaunted remedies for removing this disagreeable as well as painful condition are useless, or, if they were even adequate, they are nevertheless so disgusting to the child by their odor, by neglect of cleanliness, and even their taste, that it cannot be induced to take to the breast again.

In these cases *Arnica* is very often useful. Let 10—20 drops of the tincture be mixed with half a teacupful of water, and the nipples bathed with this lotion, after each time of nursing; and before the child is put to the breast again, wash the nipples with warm water by means of a sponge, to prevent it from getting the medicine. The frequent application of this remedy is necessary, because the sore is continually renewed when the child is applied. But in the worst forms of this complaint, *Arnica* will be of no further service; such cases must be treated by internal remedies, among which *Sulphur*, as tincture or in attenuation,

in drops or in globules, has the pre-eminence, and will often effect a cure in eight or ten days. If, however, *Sulphur* should be inefficient, *Calcarea carbonica*, 18th attenuation, must be given. Of late in these cases I have frequently found *Graphites*, 18th attenuation, serviceable, particularly when the inflammation about the nipples was very active, and approached a rose color. It is especially valuable in this affection if the woman has suffered, in former years, from scrofulous eruptions; scald-head, for instance, and still complains of itching and small scaly sores on the head.

Sore breasts, occasioned by bruises, fright, anger and other emotions of the mind, will be removed, or at least mitigated, by the medicines recommended under these respective heads. But if, notwithstanding, there remains hardness with pungent, throbbing pains; one of the remedies directed above will commonly answer.

Erysipelatous Inflammation and Swelling of the Breasts is of common occurrence in females, while nursing, and is exceedingly troublesome; occasionally it is produced by fright, and a person who has suffered from it once, is very liable to a recurrence; at times it comes on without any perceptible cause, but much oftener it is occasioned by deferring too long the application of the infant to the breast; or is afterwards brought on, when from sickness, or other cause, the child will not take the breast, and the milk begins to curdle. A similar condition often follows the weaning of the child. The breasts then abound with the nutritious fluid, become distended, hard, and inflamed; at some points matter is formed and discharged, while at others there remains considerable hardness and inflammation, which likewise run into suppuration, or finally become permanently hard. In this manner the complaint continues, alternately discharging matter, and inflaming, with much suffering, often for months, and leaves the breast at last, covered with odious scars, in part also hardened, and often forever totally unfit for nursing. Quack-remedies given by self-sufficient midwifes, are too common, and aggravate the suffering greatly, without being able

to afford the least relief. The remedies which have proved most useful in these cases, are the following:

If—after a long pause in nursing, or other cause—the breast begins to get hard and swollen, and the milk stagnates in it, with incipient redness of the skin, and pungent pains of the affected parts, accompanied by slight feverish chills, loss of appetite, &c., *Bryonia alba*, 12th, or sometimes *Belladonna*, 15th, will restore the milk in a short time, and disperse all hardness and redness. The action of the medicine, if there be any improvement, may be waited for several days; on the contrary, if not better in three days, let the other be given, or the first repeated.

If, however, considerable inflammation have already taken place, a plaster of *Elder syrup* will be found exceedingly useful in affording relief. In cases still more severe, with erysipelatous swelling and inflammation, attended with incipient, or already existing suppuration, *Phosphorus*, 18th, one drop, or a few globules, will be beneficial. But on the contrary, if the complaint has been neglected for a long time, or, what is worse, been treated in the usual way with all sorts of salves and poultices, so that the breast in some places is suppurating, and in others hard and inflamed, or fistulous openings are formed from which a thin sometimes offensive smelling and whitish water exudes—a dose or two of *Silicea*, 18th, will often restore it again in two or three weeks, and give to it its former rotundity and fulness. This medicine should be allowed to act three or four days, and if the improvement still goes on, a much longer time; when stationary, the remedy is to be repeated.

BREATH, SHORTNESS OF.

See Asthma.

Bruises.

See also Congestion of Blood to the Head, and Concussion of the Chest.

My readers may be surprised to find in this place a description of complaints, the treatment of which is usually committed to surgery; nevertheless, they will readily perceive from what fol-

lows, that surgical science itself possesses a very small field in which, in the true sense of the word, it can be efficient.

Accordingly it is only adapted to the cure of those evils which are produced by mechanical injury, and can only be remedied by material aid—by mechanical means. These injuries embrace merely the mechanical division of substance, as wounds; severing of the connection of such parts as are of mutual use in a certain state of union, dislocations, many inequalities in the direction of the solid parts, distortions, and certain other operations, which are indispensable in themselves; but by no means should it include, swellings, ulcers, abscesses, external inflammations, pains, diseases of the eyes, boils, &c.

All these last named diseases rest entirely on a dynamic disturbance of health, which lies at the basis of all inward maladies; in fact, they are the inward sufferings, which only show their character, by interrupting the health of some outward organ.

As soon as the internal disease, which is at the foundation of the sufferings, is removed, the outward disease, which was the consequence, also disappears: and it requires certainly no real surgical aid from without. All the so-called outward as well as the inward complaints have their specific remedies, which homœopathy discovers by experiments on healthy persons, and confirms their curative virtues by giving them to the sick.

There is no reason why a contusion should not be treated with outward applications, poultices, liniments, plasters, &c., provided there be no destruction of substance, or rupture of blood-vessels. By the shock made by the instrument on the injured part, an alteration will be occasioned in the vessels and nerves, the presence and duration of which is made known by pain, a feeling of weakness, and loss of use of the parts injured, the infiltration of blood, and the consequent bluish red color.

The injury of the nerves and vessels, which is expressed by these symptoms, consists not in any mechanical division, but in a chronic disturbance of the vital power of the affected parts, and this may be restored by medicine, and the existing disproportion again adjusted.

Experience, within the course of a few years, has shown both to physicians and laymen, that *Arnica* is the medicine which can always be used in sufferings of this kind, with benefit; and homœopathic physicians have by testing it on themselves observed, that it is capable of producing in healthy persons most of the symptoms, which are caused by contusions. Abundant cases of these injuries have sufficiently shown the efficacy of *Arnica*, and I therefore recommend it here as the very best remedy.

It is best for the patient to use it both externally and internally; internally by taking two or three globules of the 6th attenuation; externally in the form of a lotion—15 to 20 drops of the *tincture* to half a teacupful of water—applied by means of rags, or by wetting the bandage occasionally, to the injured part. The pain and stiffness will first disappear, and lastly the infiltration of blood and the blue color. Nor do these last symptoms continue as long by this treatment, as by the other with outward remedies.

If the contusion has affected glandular parts, as the breasts, testicles, &c., it may be necessary, after the application of *Arnica*, to give a few doses of *Conium*, 12th, repeated every 48 hours to complete the cure. If the contusion has injured the bone, or the periosteum (skin covering the bone) only *Symphytum*, 3d attenuation, is the best remedy. I need hardly remind the reader that where lacerations, dislocations, fractures, &c., take place, they must undergo the manipulations of the surgeon, before commencing the external and internal treatment with *Arnica*. If *Arnica*, after 24 hours should not have given relief which may occur especially in dislocations—*Rhus toxicod* must be given, and repeated in 12 hours. If the improvement ceases after the second or third dose of *Rhus toxicod*, or if pains at times manifest themselves in the dislocated or sprained limb after the cure, *Ruta* in the 3d attenuation will be most suitable.

Burn. Scald.

Slight burns generally heal, without external applications, in from 24 to 48 hours; they take a longer time, when cold water

has been used at first, to allay the pain. For such injuries scarcely any remedy is needed, at least not one like cold water, calculated to retard the cure. But against large, severe burns, the best remedies are not so well known; for with these the common recourse is to cold water, the most miserable palliative, and in certain cases even the most dangerous application that can be used. The very opposite of cold water is the best cure for severe burns. An experienced cook will never hold a hand that has been scalded with hot broth or fat, in a pail of cold water, but holds it as near as possible to the glowing coals, although the pain at first may be heightened by them, and keeps it in this situation, till the pain of the burn has perceptibly diminished, or almost entirely disappeared; or he wets it with the best alcohol, or oil of terpentine warmed.

The best treatment is as follows: The burnt part is to be constantly kept wet with warm spirituous fluids; for which purpose linen rags dipped in the spirits must first be laid on the affected part, and over these, in order to prevent evaporation, and to keep all warm, pieces of woolen stuff, or sheep skin with the wool on. If a large part of the surface of the body be burnt, a person must be constantly engaged in the outward management of the patient, in taking off the pieces of woolen or sheepskin one by one, and sprinkling the pieces of linen next the skin (which are not to be taken off) as fast as they become dry, with warm alcohol, or oil of turpentine, by means of a spoon; when one part is thus moistened, it must be covered again, and the others attended to, so that when the last has been wetted and covered, he may begin again with the first, which, with fluid which evaporates as quickly as alcohol, will in the mean time have become almost dry.

In this manner the patient must be treated without intermission day and night, for which purpose two persons had better be engaged so that they may relieve each other. The successful treatment, particularly in extensive injuries from burns, depends on what is done in the first 24 hours, or in the worst cases, in the first 48 hours, that is, untill every trace of pain from the burn

is permanently removed. A bowl filled with hot water, should be at hand, in which several vessels filled with alcohol must be placed, so that there may always be a sufficient quantity properly warmed in readiness. If those parts of the body on which the patient has to lie, are likewise burnt, they must be attended to first, and dressed with the linen rags wet with warm alcohol, and over this a layer of oil-cloth; these dressings will afterwards be kept moist by the wetting from above. But if the greater part of the body be burnt, the first wetting must be with warm brandy in order to save the patient as much as possible from the first sensation of pain, which is the most severe; for the second wetting, stronger spirits may be used, and afterwards the strongest alcohol. And as the dressing is to be uninterruptedly continued through the night, care must be taken to place the lamp at a considerable distance from the patient, or to provide a lantern; as the alcohol is highly inflammable, and the vapor rising from the body of the patient may take fire and be productive of serious consequences.

In burns from gunpowder, the black grains should not be taken out of the skin, until every trace of pain from the burn shall have been permanently removed.

Enveloping the burnt parts in raw cotton is also beneficial, if made use of directly after the infliction of the burn. The cotton is to be left on, and renewed where it has slipped off, until all the pain has disappeared.

Where many applications have already been made, and the pain of the burn has ceased, but large suppurating sores remain, a salve made of equal parts of oil of white lilly and white of egg, and applied to the affected part with a feather, will be of great service. A salve made of white soap scraped into lukewarm water is likewise of great benefit. In very large and deep sores, I have used, with marked advantage, a preparation consisting of equal parts of linseed oil and cold water, with which linen rags were wet and laid on.

Bowels, Inflammation of the.

So dangerous a disease as inflammation of the bowels should not be trusted to the management of one unacquainted with medicine. This must be plain to any one. It is therefore not my intention to enter into its treatment here; but I will only adduce the chief symptoms, by which the relatives of the patient may be sufficiently aware of the danger that threatens him, and on that account be prompt in procuring a physician.

The inflammation may occupy a smaller or greater portion of the abdomen, and is exceedingly painful, at times burning, at times pungent, or tearing, very sensitive to the touch, to motion and agitation, for instance, oughing and sneezing; it is often also distended and swollen. The symptoms vary, according to the seat and degree of inflammation, and also according to the accompanying fever. The following are the most frequent: cramps, great anxiety and restlessness, constipation, tenesmus (ineffectual straining to stool), belchings, vomiting, which, however, gives no relief, colic, distention of the abdomen, coldness of the limbs, fits of fainting, great debility, emaciation, despondency, languid countenance, trembling voice, small depressed pulse, and generally fever more or less severe. The nearer the inflammation is to the chest, the more laborious and painful is the breathing, especially inspiration. In this species of inflammation the liver, stomach, intestines, and all the organs in the cavity of the abdomen, which are attacked by a greater or less number of the symptoms above described, are included.

In all affections of this kind it will be proper, before a physician can be procured, to given a dose of *Aconite*, in order to check the further progress of the inflammation. If after two hours the physician should not have arrived, and the disease is on the increase, a second dose should be given. If after waiting again, no medical aid is at hand, the following signs are to be well observed: if the patient complains of the least pain at the pit of the stomach, on the left side near the ribs, and towards the back, or extending towards the abdomen, with distention of

the region of the stomach, great anxiety, much vomiting, after which he is rather worse than better, *Ipecacuanha* will be the most serviceable remedy, and may be repeated every hour. On the contrary, if he is no better, after three or four hours, and the vomiting is still unchecked, if the strength fails more and more, and the countenance is pale and fallen, he must without delay take *Arsenicum*, a dose every two or three hours. If the disease has been occasioned by taking cold, or by cold drinks when overheated, if the pains and fever be violent, after the use of *Aconite*, *Bryonia* is the best remedy, and must likewise be repeated; it is also indicated when there is constipation, and a pricking pain, which is aggravated by every motion.

Chamomilla will be suitable when the pain is of a dull pressive character, and not increased by motion, inspiration, and external pressure, with pressure of the stomach, tightness under the ribs, difficult respiration, yellow coated tongue, bitter taste, yellowish tinge of the skin, and sudden fits of anxiety. This medicine may be repeated every two or three hours, and if it should be insufficient, followed by *Mercurius solubilis*, which may be followed, if necessary, after a few doses have been taken, by *Belladonna*. If strong tendency to a return of the disease remain, a few doses of *Sulphur* should be taken every other day.

C.

Catarrh and Hoarseness.

In both these cases, where the symptoms, and causes are mostly similar, it is necessary to have regard to the disposition of the patient, and the peculiar changes produced in it by the catarrh, in order to find out the proper remedy.

Chamomilla, 3d attenuation, is indicated when there is hoarseness with snuffling, and dryness of the eyelids, tenacious mucus in the upper part of the windpipe, burning in the throat, dryness of the mouth and thirst, dry cough with itching or tickling in the windpipe, fever towards evening, alternate chills and heat,

fretfulness, vexation at trifles, melancholy, and aversion to talking.

Aconite, one or two doses, followed by *Nux vomica* when there is scraping in the throat, dry painful sensation in the larynx, which excites coughing, and consequent pain in the pit of the stomach, and rawness throughout the chest; the patient cannot speak, has a rough, deep, dry cough with stoppage of the nose, painful breathing, heat in the hands and cheeks, sleeplessness in the evening, with cold feet and shuddering; chilliness followed by burning heat with thirst, confusion of ideas, fretfulness, disinclination to business, moroseness, loud complaining of his sufferings, quarrels about trifles, is obstinate and self-willed.

Pulsatilla, 6th attenuation, against hoarseness, rawness and painful sensation of soreness at the back of the throat, feeling of rawness of the palate, dryness in the throat, sensitiveness of the throat on swallowing, snuffling with hawking up of bloody mucus; loose cough, with pain in the chest; tickling in the fauces which brings on coughing, and is worse in the evening; chilliness with drawings in the limbs; fever towards evening followed by external heat, with weariness and languor, at night internal heat with dry skin; restless, interrupted sleep, disturbed by dreams, mild disposition, disinclination to loud speaking, disposition to weep, irritability, indifference, want of determination, desire first for one thing, then for another.

When hoarseness is the most prominent symptom, and after several days it does not manifest the least abatement, *Pulsatilla* will be the best remedy, which may be followed, after five or six days, if the hoarseness be not removed, by a dose or two of *Mercurius solubilis*. If the hoarseness arise from cold, and is unaccompanied by other symptoms, *Dulcamara* will be most suitable. In long continued and obstinate hoarseness, *Sulphur* is of service in a high attenuation. I have often removed a hoarseness of this kind with three or four doses of *Aconite*, given morning and evening.

Catarrh Fever.

When cold in the head, or catarrh, is accompanied by fever, which shows itself by external fits of cold and heat, especially in the evening; by general soreness and prostration of strength, disagreeable burning in the skin, dulness in the countenance, and drowsiness; the same remedies directed in these cases must be given. But at times these remedies, though alleviating the other symptoms, are insufficient for the removal of the fever; in such cases *Nux vomica* should be given repeatedly, and if it fail, *Mercurius solubilis* is often serviceable in the 6th attenuation, especially when there is profuse discharge accompanied by internal and external soreness of the nose, drawing rheumatic pains in the limbs, and fever. In many cases also *Hepar sulphur* will be beneficial after *Mercurius solubilis*, particularly when exposure to cold air occasions stoppage of the nostrils or headache, or when only one nostril is affected, and the headache is made worse by moving. *Aurum* is also serviceable in some cases.

Cheeks, Swelling of the.

Swelling and thickening of the cheeks arises mostly from pains of the teeth, and in such cases will be cured by the remedies which are recommended under the head of *Toothache*, namely *Chamomilla*, *Mercurius solubilis*, *Pulsatilla*, and *Arsenic*; and there will seldom be any occasion to use a particular medicine against this complaint. But it sometimes happens that one of the remedies prescribed for toothache and swelling of the face, will relieve the former but not the latter; in this case the opposite medicine must be resorted to; for instance where *Mercurius solubilis* relieved the toothache, *Pulsatilla*, or *vice versa*; or when *Chamomile* was first used, *Pulsatilla*, and in like manner reversed. *Mercurius solubilis* suits principally in swelling of the cheek attended by copious flow of saliva from the mouth, with tearing pains and shining redness of the skin, as in erysipelas, or rose.

Where the toothache is dispelled by a remedy, but the swelling remains unaltered, and is very hard and stiff, *Arnica*, in the 6th attenuation, commonly relieves.

It is not always possible speedily to effect the dispersion or scattering of the swelling, where the inflammation is very great, or the suitable remedy has not been applied in time, or it has been improperly treated by outward means. Nevertheless, even in such a case nothing further is to be done but leave it to the homœopathic treatment, which will safely hasten the breaking of the swelling and the discharge of matter, and lead to a far more endurable state of things, than when plasters, poultices, or the lancet, are resorted to. But if external applications are necessary to satisfy one laboring under a complaint of this kind; if the swelling be caused by a boil on the gums, let figs cut small, and boiled in milk, be laid upon the boil; but if it is on the cheek, or the under jaw, little bags filled with bran or flaxseed applied warm, will answer better. The opening of the abscess into the mouth needs no particular care, as it soon heals of itself; on the contrary, if the opening be external, it will be requisite to apply simple cerate, or unsalted butter, thinly spread on lint and secured by several folds of a bandage, to keep out the atmospheric air, and guard against particles of dust or other impurities, calculated to retard the process of healing.

By the expression *thick cheek*, is frequently also understood the swelling of the glands under the ear and chin, which takes place at times in consequence of toothache, and frequently from cold and the noxious influences of the weather. If such swelling of the glands depends on toothache, it is mostly dispersed when the latter subsides without the necessity of recurring to any particular treatment. If, however, it arise from influences that act immediately on these parts, it is proper to adopt in time a suitable remedy, since not unfrequently, by neglect, suppuration or hardness takes place. *Mercurius solubilis* is very often serviceable, in the lower attenuations. If the swelling be attended by considerable pain and other symptoms, this medicine may be repeated often, say morning, afternoon and evening. But if the pain has entirely disappeared, or has given place to throbbing, having previously been sticking and pressive, *Chamomilla*, *Hepar sulphur*, or *Calcarea carbonica*, should be administered.

Against indurated glands situated on the side of the neck, under the chin, and in the throat, for the removal of which all the apparently suitable remedies have been applied in vain, I have often succeeded with *Dulcamara* in removing the hardness in two or three weeks; or in some cases, where this remedy was insufficient, it disappeared after taking a few doses of *Calcarea carbonica*.

CHILBLAIN.

See Frost-Bite.

Chicken Pox (Varicella).

The chicken pox is a disease very similar to small-pox, but differs from it by its speedier course and mildness, and by the want of the peculiar odor of the latter. It very often precedes the small pox when the latter is prevailing epidemically. The progress of chicken pox is irregular, very rapid, mild, and free of danger; and is only severe when attended by great irritability, and connected with other diseases. The duration of the eruption is mostly from three to seven days; it generally shows itself first on the face, is attended with a moderate degree of fever, or often without fever; at times it is accompanied by some catarrhal symptoms, followed by slight cough.

This disease belongs to those which may be safely left to themselves, without the use of medicine. Only in cases attended by considerable fever will it be necessary to resort to a dose or two of *Aconite*. If it be connected with other complaints, especially with another eruption of the skin, it demands the attention of a physician.

Childbed (Duration of Confinement).

The duration of confinement is reckoned from the end of labor to the period when all discharge from the womb ceases, and every trace of a pre-existing pregnancy has disappeared. The longest term embraces six weeks, during which time the diet is to be regulated, with a view to avoid any disturbance, by which a morbid condition might be induced. The patient should not

leave her bed before the ninth day, and from that time should be up but an hour at a time. She is to be kept moderately warm in bed for the first two days, and every thing calculated to interrupt the free transpiration carefully avoided; her food must be easily digestible, not stimulating nor yet containing too little nutriment; for drink let her have water that has been boiled and afterwards cooled. Every thing medicinal, particularly purgatives, must be avoided, since costiveness for the first five days is not considered at all injurious.

The morbid conditions that commonly occur, as, after-pains, bruises of the soft parts, hæmorrhage, milk-fever, &c., are for the most part treated of in the proper places. Against the diarrhœa and costiveness that show themselves in childbed, no other medicines are required than those directed under their respective heads. Some attention, however, is to be paid to that condition in which, with full breasts of milk, the mother doing perfectly well, the infant apparently in good health, and in general the most perfect harmony appears to exist in all the functions, and not the slightest cause of disease is perceptible, the child, in spite of repeated trials, will not take the breast, and thus the mother is deprived of the pleasure of nursing her treasure. Against this state of things I have given both *Cina* and *Mercurius solubilis*, 6th attenuation, to the mother, either separately, repeated at intervals of 24 hours with the best results, or in alternation.

Summer Complaint (Cholera infantum).

This disease, so common in infancy, and so often fatal under old-school treatment, usually commences with sick stomach and vomiting followed by diarrhœa. The matters ejected consist at first of food and afterwards of mucus; or there may be mere gagging and fruitless efforts to vomit. The evacuations from the bowels are very frequent and may assume various appearances, sometimes they are greenish, thin and watery, or yellowish; at others whitish or slimy and mixed with blood. Often the food is passed undigested, and the odor is occasionally very offensive.

If the disease continues for any length of time, the child loses its appetite, the flesh becomes soft, and the emaciation frequently so great that the skin hangs in folds about the person, hectic fever with evening aggravation sets in, the eyes are sunken and but half closed during sleep. The thirst for cold water is usually very great, and drinks of all kinds are immediately rejected by the stomach. The head and abdomen are hot, and the latter generally distended, while the feet and hands are cold.

The most common exciting causes of summer complaint, are, improper diet either on the part of the mother or child, vicissitudes of temperature, improper clothing, want of fresh air, and teething. The latter is probably the most frequent cause, as children are more liable to this disease during their second summer.

At the season in which children are most subject to cholera infantum, strict attention should be given to diet, exercise and clothing, both by mother and child. In regard to the diet, every thing stimulating, such as vinous and fermented beverages, acids, all highly seasoned food, and most vegetables should be dispensed with. And in general the homœopathic regimen as recommended in the beginning of this work, closely adhered to. The clothing should be adapted to the season and changed to suit the vicissitudes of temperature, care being taken not to clothe the child too warmly. The apartments should be kept cool and well aired, and the children frequently taken out into the open air.

Children living in large cities will be much benefitted by a ride out into the country, or on the water.

The medicines most efficacious in this complaint are *Antimonium crudum, Arsenicum, Bryonia, Carbo vegetabilis, Dulcamara, Ipecacuanha, Mercurius solubilis, Nux vomica, Veratrum,* and *Sulphur.* The following are the indications governing the choice of each.

Antimonium crudum, when the tongue is coated with white or yellow; dryness of the mouth with thirst; nausea with vomit-

ing, or gagging and cough; distension of the abdomen with flatuleney; offensive, slimy stools, and frequent passages of water.

Arsenicum, if the child be very weak, pale and emaciated; inflation of the abdomen; cold extremities; loss of appetite; nausea and vomiting; intense thirst; yellow and watery, white or *brownish* offensive diarrhœa, which is worse after midnight, towards morning, and after eating or drinking.

Bryonia, when the diarrhœa comes on in hot weather, and is accompanied by much thirst; vomiting of food; nausea and vomiting after eating; diarrhœa with colic; stools have a putrid smell, are white or brownish and lumpy.

Carbo vegetabilis: if *Bryonia* afford but temporary relief give *Carbo vegetabilis*, especially if the evacuations be very thin and offensive, and are attended with burning, and much pain.

Dulcamara, if the complaint return every time the weather gets cool, or takes place after drinking cold water while in a heat; violent thirst for cold water; diarrhœa of a greenish or brownish mucus, worse at night.

Ipecacuanha, if given in the commencement of the disease will generally arrest its progress at once. The symptoms which indicate this remedy are, chiefly, nausea and vomiting of food and drink, or of mucus and bile, attended with diarrhœa of fermented stools of white flocks or tinged with blood; coated tongue; dislike to all food; and raging thirst.

Mercurius solubilis, when the diarrhœa is worse before midnight and is attended with colic, straining at stool, and perspiration; evacuations scanty, greenish, sour, and attended with nausea and eructations.

Nux vomica: if *Ipecacuanha* should not be efficacious in arresting the disease at the outset give one dose of *Nux vomica* at night and another next morning.

Veratrum, when the weakness from the nausea and vomiting is so great as almost to cause fainting; great exhaustion, vomiting and diarrhœa; vomiting after swallowing the least liquid; the slightest movement excites vomiting; thirst for cold water;

sensitiveness at the pit of the stomach; colic, with burning and cutting pains in the abdomen; loose, brownish, and blackish stools; and small, involuntary evacuations of liquid fæces.

Sulphur will be valuable in protracted cases, especially when the evacuations from the bowels are frequent, and greenish, thin and watery, or whitish and slimy.

Some inveterate cases of this complaint are said to have been cured by the administration of fresh, unsalted butter, melted—a tablespoonful given at a time, and repeated three or four times a day.

Cholera Morbus.

This disease mostly comes on suddenly; it prevails chiefly as an epidemic in the heat of summer, hence a high degree of heat long continued, and sudden reduction of temperature during hot weather, are the chief exciting causes. The patient is suddenly attacked with violent vomiting; at first all that he has eaten is ejected, then a watery, slimy, and finally bilious fluid in greater or smaller quantity; the substances thrown up have occasionally a very offensive smell, and excite increased loathing. At the same time violent and frequent loose evacuations take place, from the bowels, at first fæcal, then watery, greenish, and frothy, accompanied with severe burning colicy pains, chiefly about the navel. When the disease continues for some time, the following symptoms are also manifest: fulness at the pit of the stomach, anxiety, severe cramp of the stomach, cramps in the calves of the legs, pulse hardly perceptible, and extreme debility.

The chief remedy for this disease is *Veratrum*, 12th, every quarter or half hour, in doses of a drop of the tincture, or a few globules, till the symptoms abate; the more seldom the vomiting and purging occur, the less frequently the medicine is to be given. If there be no looseness of the bowels, *Ipecacuanha*, which in this case is preferable to *Veratrum*, should be given in the 3d attenuation, and repeated after every attack of vomiting. If the disease has been brought on by violent anger, *Chamomilla* is the specific remedy.

Cholera, Asiatic.

Asiatic Cholera is an epidemic disease, which, by its sudden attack and rapid progress, often occasions death in a few hours, if suitable remedies are not promptly administered, which is not easily practicable at a great distance from a physician.

The disease attacks persons of all ages, but very young and very aged subjects are least liable to it. Generally for a very short time before the onset the patient feels weak, fretful, unfit for business, and is then suddenly attacked with vomiting and purging simultaneously. The food and fæces are first evacuated, and the passages are often so frequent that the patient is unable to rise from the night-chair. Gradually the evacuations degenerate more and more, and finally become like rice-water, with increased prostration of strength, and severe cutting and griping pain in the bowels. Soon succeed contractions in the muscles of the legs, which gradually end in cramps, and are most intolerable in the calves of the legs; these are followed by tightness of the chest, anxiety, almost entire loss of pulse, and burning in the pit of the stomach, the skin is icy-cold, and the hands and feet assume a wrinkled appearance, as if they had been long employed in washing; the interior of the mouth, the breath, and the tongue are cold, the voice hoarse, the countenance sunken, the eyes—directed upwards—are deeply sunk, with greyish brown edges, and the secretion of urine totally suppressed.

For this disease, particularly at the commencement, there is no remedy more effectual than *Camphora*—one part of the tincture of camphor to twenty parts of alcohol—of which the patient should take one or two drops on sugar, or in a spoonful of water every two to five minutes, according to the violence of the disease. As the disease abates, the doses will of course be given less frequently. If the disease comes on at once with great violence, it is well to bathe one part of the body, under the bedclothes, after another with camphorated spirits, and afterwards to wrap these parts in woolen cloths. If the disease is so far advanced, as to be no longer affected by the camphor, *Veratrum* will be most suitable, which in like manner is to be given every

quarter, half, or whole hour. After it *Arsenicum*, 12th to 18th attenuation, is most frequently beneficial. *Cuprum metallicum*, 12th attenuation, also deserves attention in this highly dangerous disease, and is particularly beneficial in severe cramps of the muscles; it must be repeated as the preceding. Besides these, in the milder cases of *Cholerine*, so-called, *Ipecacuanha*, 3d attenuation, and *Veratrum*, in alternation, must not be overlooked.

In this disease ice-cold drinks in very small quantities are most worthy of recommendation, as they are not easily rejected by the stomach; warm drinks cannot be borne. Ice-water clysters are also useful. Where this dreadful disease prevails, persons in health should avoid: acids, stimulating drinks, overloading the stomach, taking cold, excessive exercise, and violent emotions of the mind.

Cold in the Head. Catarrh.

Nux vomica is indicated in this complaint, when accompanied with great dryness of the mouth, heat of the face, burning redness of the cheeks in the evening, itching in the nose, stoppage of the nose at night, and discharge during the day, heat in the head, dulness in the head, general feeling of soreness, as if one had been beaten, fretfulness, and proneness to anger.

Pulsatilla, 12th, against tickling in the nose, as if from fine snuff, frequent hard sneezing, loss of smell, blowing of blood from the nose, offensive mucus discharge from the nose, sore, painful nostrils, sensitiveness of the eyes to light, oppressive pain of the head, restless sleep, fretfulness, weeping, chilliness and hoarseness.

Chamomilla, 3d, when there is discharge of mucus from the nose, with ulcerated nostrils; chapped, inflamed; painful lips which scale off; sleepiness, numbness of the head with dizziness, one red and one pale cheek, chills and great thirst. It is of special use in children, and when suppressed perspiration is the cause of the catarrh.

Cold in the head in infants at the breast which prevents them from breathing while at suck, makes them impatient and causes

them to cry out; generally arises in consequence of slight cold, which is at first accompanied by a discharge from the nostrils, the check of which causes a disagreeable dryness. Children of considerable growth also suffer from it, and in these it induces a disagreeable habit of always keeping the mouth open, and breathing through it.

My treatment of this complaint is as follows: I have the outside of the nose rubbed several times a day with some fatty substance such as chicken fat, almond oil, or thick cream, and the steam of warm milk occasionally introduced into the nose. But as in this affection the natural secretion of mucus from the lining membrane of the nose is deficient, which is the cause of the affection, it is advisable to anoint the inner surface of the nostrils with some oily fluid, by means of a feather, in order to replace the natural mucus.

If this does not effect a cure, inward remedies must be used, the most suitable of these is *Nux vomica*, of which two or three globules may be given to the child. Some homœopathic physicians have found *Sambucus nigra*, 1st, useful.

CONCUSSION OF THE CHEST.

See Bruises.

Congestion of Blood to the Head.

Many persons suffer from frequent congestion of blood to the head, which is often occasioned by a sedentary life, incessant thinking, indulging too freely in rich food, and in spirituous and other stimulating drinks, such as coffee. It is known by the following symptoms: swelling of the vessels of the head, with strong pulsations in the head, which the patient feels through the whole body; heat, chiefly in the forehead and over the sockets of the eyes, much aggravated by stooping or coughing, and troublesome dreams. The most suitable remedy in most cases is *Aconite* in several successive doses. But should this remedy not suffice, if coffee is entirely abstained from, a small dose of *Nux vomica* will remove it most safely.

Belladonna is also often of service in the dose of two or three globules of the 15th attenuation, when there is great swellings of the veins of the head, in connection with violent fits of burning, sticking pain on one side of the head, which by any motion of the body, or by any noise, bright light, &c., is perceptibly increased; and always after a dose of *Aconite*. Frequently also we find in such congestion of blood, sparks, glimmering, and darkness before the eyes; double vision, ringing in the ears, also fits of fainting, and drowsiness. This remedy should be administered, when this complaint occurs to children while teething, or when frequent spasms arise from this source. Very often also at the period of puberty in girls, when menstruation has not been completely established; also after taking cold in consequence of getting wet feet, at the commencement of menstruation, which interrupts its course. When this congestion of blood is very great, the *Belladonna* will be assisted in its action by a thick warm poultice of oatmeal on the soles of the feet. It is necessary to wait after giving *Aconite* for four to six hours, before either *Nux vomica* or *Belladonna* can be given. *Aconite* is also the best medicine, when the congestion has been caused by fright and anger.

Arnica, two or three globules of the 6th attenuation, is the chief remedy, when the affection is occasioned by a serious fall, thrust, or blow on the head. Cases of this kind should always, if possible, be committed to the physician, but at a great distance from one it is desirable for the laity to be acquainted with the most suitable remedy. The more serious symptoms from such injuries are, stupor, fainting, coldness on a small part of the head, compression, disposition of one or both eyes to close, fearfulness, vomiting, &c. As it frequently happens that blood has been extravasated either exteriorly or interiorly, it is very proper to apply the *Arnica* outwardly; a good lotion for this purpose may be made by mixing 10 or 12 drops of the tincture in two to three ounces of water; this can be applied by wetting cloths with it, and laying them upon the injured parts. If bleeding at the nose follow the application of *Arnica*, it must not be suppressed, as it

is a favorable symptom. If the symptoms return after 16 to 24 hours, the medicine must be given once more internally, the conditions being otherwise favorable. In great excitability and sleeplessness six or eight globules, or a drop of the 3d attenuation of *Coffea cruda* may be given; this remedy is also useful, when the congestion of blood has been occasioned by powerful excitement of mind either pleasantly or otherwise, as frequently met with in irritable persons. Congestion of blood after anger is relieved by *Chamomilla;* after intense anger or gnawing grief, by *Ignatia amara;* after sudden fits of passion, by *Nux vomica;* after fright, by *Opium;* and during menstruation, by *Crocus,* as I have had often occasion to prove; most commonly congestion of this kind shows itself some days before the expected period, or soon after the cessation.

In congestions to the head with sleeplessness and anxiety in debilitated persons—where there is an unnatural accumulation of vital power, while in the other parts of the system it is unequally distributed—a very useful auxiliary is, a few passes of animal magnetism with moderately strong will, by gentle pressure of the hand, from the crown of the head, slowly over the body, to the ends of the toes.

Congestion of Blood to the Chest.

This disease is frequently removed by *Nux vomica,* if it arise from causes similar to those producing congestion to the head, and is characterised by palpitation of the heart, short, hurried breathing, pressure, anxiety and difficulty of breathing, and its frequent return occasions long continued spasms of the chest.

A similar condition I have often observed at the time of menstruation (as well before and during, as after it) in delicate girls, who lived very sedentary lives, and yet were plethoric. The patients complain some days before menstruation of want of air, especially when going up stairs; all at once, and often when sitting, there comes on anxiety, loss of breath, oppression of the chest, great restlessness (the patients being obliged to be constantly moving, or at least assuming different positions), a sen-

sation of fulness in the chest, which they usually make known by such expressions, as, "my heart will be pulled off"—"it is forced upwards";—the latter really seems to be the case, for a disposition to vomit takes place, a taste of blood in the mouth, and a penetrating short cough brings up blood somewhat frothy. Against this discouraging and dangerous condition, there should be no delay in administering the proper medicine, which is *Aconite,* of which three to six globules may be given, according to the violence of the symptoms, every hour or half hour; the best mode of administering it is to put 16—20 globules (or two, three, four, or more drops, if the tincture be used) in two ounces of water, and let the patient take a teaspoonful every quarter, or half hour, &c.

As the patient becomes more quiet, the intervals between the doses must be gradually lengthened. *Belladonna* also relieves this condition, when it is induced by similar causes to those which occasion congestion to the head. The following symptoms especially demand this remedy: great shortness of breath, with an incessant, short, harassing cough; anxiety, restlessness, strong and hurried pulsation of the heart (a symptom of commencing spasm of the chest), burning heat, sometimes attended with symptoms of congestion to the head. If at the same time, particularly in young subjects, there be costiveness, the symptoms will be much alleviated by a lavement of cold water.

In this affection, as well as in congestion to the head, the same medicines may be administered under the same conditions.

Congestion of Blood to the Abdomen.

Congestion of blood to the abdomen causes a distressing sensation of heat, burning pain, hardness and tightness, without there having been any overloading of the stomach. We find this congestion chiefly in persons subject to piles or hypochondria. If these symptoms have been of long standing, they will seldom be removed by the usual remedies, and the patient will do well to place himself in the care of an intelligent and skillful physician, in order to avoid greater obstinacy, and even incurableness of

the disease. Generally in a disease of this kind it is necessary strictly to observe the prescribed rules of diet, as it depends very often on a sedentary, debauched, and dissolute life, and a strictly discreet way of living, active exercise in the open air, and avoidance of dissipation, must be rigidly observed.

If besides the symptoms above mentioned, there be pains in the back, as if it would break, and there were no strength at all in it, so that the patient is able to walk with great difficulty, *Nux vomica* is the best remedy.

The most appropriate remedy, after *Nux vomica*, is *Sulphur*, which may be given either in tincture or in attenuation; it may be given once a day, and when gradual improvement takes place, every three, four, or six days; or it may be administered in alternation with *Nux vomica*.

In all these congestive cases, the copious use of cold water is an indispensable duty for the patients, and in summer time it will be advisable to take the shower bath daily.

The medicines recommended in itching of the anus, are often of service here, when the symptoms are like those mentioned under that head; and the remedies directed in the preceding section are also often the most suitable.

Constipation.

1. *Opium* will mostly cure a simple case of constipation which does not depend on any chronic predisposition, nor on any chronic disease, but on external circumstances, especially those which have a depressing effect on the nervous system, and without being particularly painful, manifests the following symptoms:

Inclination to go to stool, with the feeling as if the rectum were closed, and inability to effect anything, throbbing in the abdomen, pressure in the stomach, want of appetite, thirst, dryness in the mouth and sensation of weight in the abdomen.

2. *Nux vomica*, 6th or 12th attenuation, is best adapted to the removal of constipation consequent upon overloading the stomach, with indigestible food, or with a great variety; or when

it is the result of a previous diarrhœa, which has either been checked too suddenly by improper medicine, or without medicine its disappearance is followed by costiveness, and presents the following symptoms:

Want of appetite, disagreeable taste in the mouth, tongue covered with mucus, loathing, nausea, relaxation of the abdomen with pressure, painful stitches in the abdomen. A feeling of weight low down, cutting pains, general heat, flushed face, confused headache, aversion and inability to labor, disturbed sleep, oppressed breathing, unusual warmth in the abdomen, fretfulness, and complaining disposition.

3. *Pulsatilla*, 12th attenuation, is indicated in cases similar to the foregoing, the only difference being, that in place of violent and loud complaints of his condition, and disposition to find fault with others without any cause, and to quarrel, the patient is more inclined to secret chagrin, is averse to talking; or when he is of a quiet, mild temperament; also when the constipation arises from too free use of fat, of pastry made with rancid lard or butter, and the following symptoms are presented:

Bilious, bitter taste in the mouth, particularly after eating, want of appetite, sour eructations; eructations tasting of the food eaten; nausea, mucus in the mouth, burning in the throat, constriction of the abdomen, as if everything were hard and impervious, and nothing could pass by stool; pain in the abdomen, as if the intestines were bruised or twisted, griping, dirty paleness of the complexion, languor, chilliness.

Pulsatilla, though in general much more suitable in diarrhœa than constipation, is nevertheless indicated when the exciting causes and symptoms are as above given. When it does not suffice, *Nux vomica* or *Bryonia* will mostly answer.

Bryonia is also a valuable remedy against constipation, and may be considered almost specific, when the disease occurs in summer, and in persons subject to rheumatism, with chilliness; also when connected with congestion of blood to the head, oppressive headache, irritability, proneness to anger, in temperaments too much given to violent emotions.

China is likewise a serviceable remedy in constipation, especially when it occurs in persons of weakly constitutions, and in females; when there is too great sensibility of the whole nervous system, with a quarrelsome, fretful disposition, and pressing pain in the forehead, giddiness and heat in the head; an evacuation is effected with great difficulty; pain in the rectum, and subsequent irritation.

In cases of great obstinacy, lavements of water are useful auxiliaries, and should at first be made use of daily; warm water may be used at first, and if ineffectual cold water; or in some cases warm soapsuds with a spoonful of linseed oil, or milk with a spoonful of honey or syrup may be preferable.

Corns.

These are callous, hard excrescences on the toes, or on the sides of the feet, arising mostly from tight shoes; they are seated deep in the skin, and occasionally become sensitive and painful. If one wishes to be freed from them, it is necessary that he at once avoid wearing tight shoes. However, new excrescences are often formed, or the old begin to inflame without any visible external cause, and become very painful. The most beneficial remedy is *Arnica*, two or three globules of the 6th attenuation of which generally contributes very much to the eradication of corns. But if this remedy should not be effectual, then *Nux vomica*, *Pulsatilla*, or *Rhus toxicod* may be tried.

Colic.

The causes of colic are very various, and equally so are the remedies. The most usual causes are the following:

1. *From cold, wet feet, suppressed perspiration.*

Chamomilla, 3d attenuation, against severe cutting, tearing and pinching pains of the abdomen, which are so intense as hardly to be borne; a sensation as if the whole abdomen were hollow, with constant motion of the intestines; blue circles about the eyes, and copious collection of saliva in the mouth. Severe tearing pain under the navel, and pain in the small of the back,

as if it were broken in two; nausea, or diarrhœa with green, watery or mucus discharges. *Pulsatilla*, 12th attenuation, is also frequently serviceable.

2. *From flatulence.*

Nux vomica, when there is hard stools, or even complete constipation, sensation of great weight in the abdomen with rumbling noise and unusual warmth; rigid tension of the abdomen, with anxious, short and tiresome breathing, the abdomen seems too full, under the ribs every thing seems to be stuffed out, drawing, severe pinching and contracting pains, as if the intestines were squeezed between stones; pressure in the pit of the stomach, and expansive, dull headache; the abdomen is painful to the touch, loss of memory, and cold hands and feet in the most severe cases. This remedy is likewise appropriate; in flatulent colic seated low down in the abdomen with sharp pressure on the bladder, rectum and adjacent parts, as if from a cutting or sharp pointed instrument; or as if the cutting wind were forcing all these parts out; the pains are worse on motion, compelling the patient to bend himself double, but are relieved or cease entirely when at rest.

3. *From worms.*

Mercurius solubilis, 6th attenuation: colic with frequent inclination to vomit, and rising of water into the throat; severe, twisting, contracting pain in the abdomen, with a feeling of hardness about the navel; twitchings of the abdominal muscles, sensation of crawling in the throat, frequent desire to swallow, at times keen appetite, loathing of sweet things, constant inclination to stool, distended, hard abdomen; tensive, burning pain about the navel; flow of saliva; eructations, general debility, diarrhœa, with evacuations of mucus. The attacks come on more especially about midnight: Frequently also *Artemesia*, or *Cina*, 6th attenuation, are serviceable.

4. *From overloading the stomach, and unwholesome food.*

Strong coffee in small quantities, frequently repeated, will be found serviceable in colic occasioned by surfeiting or unwhole-

some food, which presents the following symptoms: Uneasiness and weight in the abdomen, disposition to vomit, rumbling in the lower part of the abdomen, sensation of distension and painful constriction of the abdomen; sudden griping pain in the abdomen; cutting pain of the bowels, increased by touch; white frothy saliva in the mouth, tearing and pricking pain over the navel, nausea; diarrhœa with greenish evacuations and severe pain in the stomach, pale face with blue circles about the eyes, convulsive movements of the limbs, doubling up of the whole body, and pressive, constrictive headache. After taking a few draughts of coffee, the patient will mostly be relieved by its action in determining the depraved contents of the stomach upwards and downwards. But if this should not be effectual in a few hours, *Pulsatilla* must be given.

5. *Hæmorrhoidal colic.*

Pulsatilla, against colic from hæmorrhoids, indicated by throbbing in the pit of the stomach, an exceedingly disagreeable feeling of constriction in the abdomen, as if it were too full, rumbling of wind, and inability to pass the collected flatulence; distressing heat in the abdomen as if from agitation of blood; distension of the abdomen, general heat with swollen veins on the hands and forehead; inability to bear the least pressure, even that of the clothes; the pain is worse when lying down, and somewhat easier on moving about; pain in the small of the back as if it had been beaten; the patient can hardly stand erect; the abdomen is sore as if it had been bruised; restlessness, anxiety, and sleeplessness.

Nux vomica is indicated when the urinary bladder is implicated with hæmorrhoidal colic, and the disease is of an exceedingly high grade; the sexual organs and parts in the region of the bladder are spasmodically contracted; the irritability of the abdomen increases the longer the disease continues, and there is an incessant desire to pass urine, without the ability to void any; anxiety and restlessness are also common attendants, which are increased as the complaint continues.

Colocynth, in the 12th attenuation, is one of the best medicines in the different varieties of colic above described, especially when there is no cause assignable. It is particularly useful, when the pain in the abdomen is continuous, or with occasionally slight amelioration always returning with renewed violence; and possessing the peculiarity of leaving, after its removal, a feeling of soreness, as if from a bruise, over the whole abdomen; the slightest motion excites renewed suffering, and the patient complains that the intestines feel as if they were suspended on a small thread, on which account he is compelled to move very slowly and cautiously.

This remedy will also be useful, when the pain is most severe at one small spot in the region of the navel, is periodical, returning perhaps every five or ten minutes, or less frequently, and beginning each time with a slight drawing from the sides towards the centre of the abdomen, which increases gradually in severity to a squeezing, pressing, boring and tearing pain, and becomes so severe that the patient is forced to cry out, bites whatever is near him, breaks out in a profuse perspiration, and writhes about like a worm. Here, too, the sensibility of the abdomen already mentioned remains for a long time.

6. *During menstruation.*

Nux vomica, against a kind of twisting pain in the abdomen and nausea, as if the menses were about to appear; rumbling pain in the abdomen; or a sensation as if it were distended; pricking cramplike pain in the uterus; pain on the pubes as if from a bruise, which at times increases to a painful pressing and dragging; pinching pain in the region of the bladder; feeling of great distension in the abdomen as if it would burst.

Coffea cruda, against extremely violent cramplike pain of the abdomen, which even extends to the breast; pain as if all the intestines were being cut to pieces, by which the patient is rendered delirious; violent contractions of the body with convulsions of the limbs; gritting of the teeth with loud screams, general coldness; spasmodic rigidity of the whole body; suspended

respiration and groaning; sensation as if the abdomen would burst; fulness and pressure of the abdomen. Those persons who make use of coffee daily as a drink, will not be benefited by it as a medicine: in such cases, *Chamomilla*, 3d attenuation, is frequently effectual, and should be resorted to. This remedy has been frequently used with success in these cases, as a domestic medicine, but is generally taken in too great quantity as tea, in which way it does more harm than good.

Pulsatilla, is indicated when there is sensation of heaviness in the abdomen, like a stone, with severe pressing pain deep in the abdomen toward the small of the back; drawing pains extending from the small of the back down the thighs; numbness of the thighs by sitting, accompanied by painful pressure in the rectum as if to evacuate, and backache.

Belladonna, 18th attenuation, should be given if these latter symptoms are attended by a peculiar urging and pressure as if all the parts would fall out.

Croup.

This affection bears a very great resemblance to spasm of the chest in children, on which account, therefore, it should not generally be treated without calling in a physician. Still it appears to me important to make some remarks here on its commencement and progress, and at the same time on the remedies most suitable for the moment, when perhaps the distance of the physician from the dwelling of the patient may be so great, that he may not be able to arrive in a less time than four or six hours.

The disease usually commences with a slight catarrh, in which the child becomes somewhat hoarse, ill-humored and languid, especially towards evening; to these is added a dry, short, broken, hollow, hoarse cough with slight pain and burning or tickling in the windpipe. In winter and after sudden cold it seldom shows itself with these mild symptoms, but sets in at once with considerable fever, in which the symptoms above mentioned are found in a much more active degree; the sound of the cough, the inspirations, and the voice are hoarse, ringing, rattling, whist-

ling, or hissing; at times, when the cough continues, the voice is sharp, screaming, fine, and high toned; but oftener it is hoarse, barking, deep, and hollow. There is always some pain felt at and below the head of the windpipe, chiefly when coughing, at which time the child distinctly points to the spot. Speaking is difficult and hasty, the expression anxious, the face is red, puffed up, and marbled or bluish; lastly, there is a clammy sweat and rattling respiration which can only be effected by throwing the head back.

It will at once be perceived that the treatment of a disease threatening so much danger, should be committed to the care of an intelligent physician; nevertheless it is certainly desirable to know the remedies most suitable at the commencement of an attack. Frequently the remedies recommended under *Cough* and *Catarrh* will be found most efficient. But if none of these appear to suit the symptoms, and the case is urgent, *Aconite* should be given in dilution, or in globules, and repeated every one and a half or two hours, and continued, if there be any improvement, at longer and longer intervals. A good way to administer it is to dissolve a few globules, or two or three drops, in half a teacupful of water, and give it by teaspoonsful. If after four to six hours there be no improvement, and the physician has not yet made his appearance, the medicine must be discontinued, as it will have effected all it could. The best remedy now is *Spongia*, a few globules of the 6th attenuation, especially if the respiration is whistling, hurried, anxious, and difficult; the cough hollow and shrill, with pain at the head of the windpipe, which symptoms, if not speedily relieved, may lead to a fatal termination in a few hours. If, by waiting three or four hours after giving the *Spongia*, there should be no remission of the sufferings, and the same croupy tone of the cough and respiration continues, and there appears to be great danger of suffocation: *Hepar sulphur*, 6th attenuation, is the best remedy, and must be repeated every two hours. If this effect some improvement, but does not fully relieve, it may be alternated with *Spongia* every other hour. Should, however,

this treatment fail, or after a few hours the disease becomes worse, or at least is stationary, *Phosphorus* must be given in the 18th attenuation, a dose every three hours. Very great alleviation, or even speedy termination of the disease is often promoted by laying a sponge moistened with warm water over the head of the windpipe; it should be changed frequently.

Cough.

There are numerous species and grades of cough, and consequently a variety of remedies required in its treatment. It would be useless, to particularize in this place all the kinds of cough together with their remedies; I shall confine myself only to those which most commonly occur.

Nux vomica, 12th attenuation, is indicated against a rough, scraping sensation in the throat with a tickling in the palate, which excites a dry, constant, troublesome cough, occasioning headache, as if it would burst with every spell of coughing; at times accompanied with a violent pain as from a bruise, in the whole abdomen; the patient is frequently awoke by the cough about three or four o'clock; pain under the ribs after coughing, as if one had received a blow there; obstructed respiration, especially at night, with a sensation as if something were lying on the breast, and this excites heat. To these may be added the symptoms of cold and catarrh, which have already been described.

Chamomilla, 3d attenuation, against a strong, dry cough, even in sleep, which in day time is excited by an incessant tickling in the upper part of the throat; sensation, while coughing, as if something were coming into the throat, which threatens to take away the breath. This remedy is peculiarly suited to children, and also to cough produced by physical irritants and anger.

Pulsatilla, 12th attenuation, when at the beginning there is a dry cough for half a day, followed for several days by a free discharge of mucus from the upper part of the windpipe, which at times is streaked with blood: also when the chest soon becomes affected, and the patient is obliged to cough and ex-

pectorate a great deal; the mucus thrown off is yellow and has a saltish or sometimes a nauseous or bitter taste; pain in the abdomen from coughing, as if it has been bruised, and scraping in the windpipe.

Hyoscyamus, 6th attenuation, against dry, frequent cough, which is chiefly troublesome at night and prevents sleep, continuing incessantly while lying in bed, but subsides on sitting up, so that the patient is obliged to sit up at short intervals, in order to mitigate its violence; sensation of tickling in the windpipe, and spasmodic cough. It is particularly serviceable in children.

Ipecacuanha, 3d attenuation, against an exceedingly tight cough, which obstructs respiration, with expectoration of nauseous mucus; tickling in the upper part of the larynx; feeling of constriction in the larynx; soreness in the chest; the cough is aggravated by going into the cold air, and followed by a beating pain in the head and in the pit of the stomach, with shortness of breath and perspiration on the forehead. The cough is often of such a violent character, that it prevents breathing altogether, till vomiting ensues.

Belladonna, against spasmodic cough, which affects the whole body, and almost entirely prevents respiration; cough excited by insufferable tickling in the upper part of the larynx, without expectoration. The attacks frequently come on every night about 12 o'clock, arousing the patient from sleep.

In the frequent, violent and tight coughs of children, of females during menstruation, and persons who have rupture, which is liable to injury from the concussion, Mesmerism may be used with great advantage, as it has this advantage that it does not interfere with the medicine previously administered. In severe cases occurring at night especially, it may be used with much benefit. It will be equally serviceable in the spasms of the chest of children.

Aconite is indicated in that species of cough which is excited by a sensation of soreness or rawness in the fauces, and gradually

increases to a short, dry, tight and continuous cough, with a burning pain in the larynx. It may be repeated every four to six hours.

Crying of Infants.

The crying of infants, which depends on causes easily obviated, as from too tight dressing, too great warmth, want of changing, pricking of pins, &c., needs no remark, as it spontaneously ceases by the removal of the cause. But sometimes it continues for hours or days together without there being any coincident disease or other cause. In such cases a dose or two of *Chamomilla* will often be of service, or at times also a small dose of *Belladonna;* but when the child is imprudently disturbed in its rest, and cannot go to sleep again, *Coffea* is the remedy. If there be much restlessness, tossing about, or bellyache, which may be known by the twisting motions of the body, with loose acrid stools, *Chamomilla* is mostly effectual; when unaccompanied by diarrhœa, *Jalappa*, 3d attenuation. If there be flatulent distension and consequent pain, a small dose of *Nux vomica* will generally afford relief. But if this is connected with ineffectual straining at stool without relieving the bellyache, *Rheum*, 6th attenuation, is most appropriate.

D.

Delirium tremens. Drunkenness.

Who is there, that is unacquainted with the symptoms of drunkenness? Quite unconsciously the drunkard reels and staggers, with stammering speech, with great gravity, sadness or rage, with ridiculous gestures and attitudes, till finally stupefied he tumbles over, and falls into a snoring, almost unwakable sleep. If there be an inclination to vomit in an intoxicated person, it must not be checked, but should be promoted; this is most readily done by a dish of strong, black coffee, which at the same time often prevents the injurious and very troublesome after-

effects, such as dullness of intellect, sluggishness, heaviness of the limbs, &c. But in persons who are not easily disposed to vomiting, *Nux vomica* will be more beneficial than coffee. *Nux vomica* is also the remedy most generally indicated in the pains which follow drunkenness, and may be given in alternation with coffee, till the bad effects are counteracted; it may be given in such cases every two hours, and in the intervals a dose of coffee. In weakness of the stomach, brought on by excessive drinking, in which the patient is affected with constant nausea and aversion to food, the best remedy for removing the exciting cause is *Antimonium crudum*, a dose daily, which may, if necessary, after a few days, be alternated daily with *Nux vomica*. If, however, there be much tendency to vomiting, a few doses of *Ipecacuanha* should be given, at intervals of four or six hours, until it cease.

The inordinate love of drink, a true disease which renews its attacks from time to time, like an intermittent fever, and then leaves the patient free for days, weeks, and even months, during which time not the least inclination for it is manifested,—is often cured by repeated doses of *Sulphur*. I shall now give the symptoms of *Mania* from drink (*Delirium tremens*) with some distinctness, and also some of the best remedies.

Before the onset of the disease, the drunkard suffers from numerous unpleasant symptoms, such as want of appetite, nausea, vomiting, and constipation, at times alternately with diarrhœa which even sometimes amounts to cholera morbus; these are accompanied with moroseness, weakness of memory, confusion of ideas, anxiety, stammering, indistinct speech, unsteady gait; restless, anxious sleep with profuse sweats; dullness of hearing, and vision. These last symptoms grow worse at the approach of the disease; the images seen in sleep are transferred to the waking state, and the patient, long after waking, thinks them real. Entire inability to sleep at length supervenes, with great loquacity, activity, and finally the most incongruent mania, sometimes merry, at others of a violently irritable kind, with anxiety and dread of some imaginary danger. The pulse can seldom be

distinctly felt, on account of the great trembling and jerking of all the limbs, which latter symptoms indeed generally exist a long time before the mania comes on. The face is red, and at times of a yellowish tinge. The patient complains of heat in the head, headache, tingling of the ears, &c.

Nux vomica and coffee, repeated as above, will also be found useful here.

Arsenicum, which is a valuable remedy in intoxication, and often speedily removes the unpleasant effects occasioned thereby, is also of great benefit in delirium tremens against the following symptoms: trembling of the limbs; pale, yellowish, bloated complexion; coldness and blueness of the skin; attacks of fainting, especially while vomiting; inability to sleep, with restlessness and tossing about; oppressive heat; sudden starts as from fright, with skrinking, attacks of anguish, &c.

Opium is indicated in this disease when it presents the following symptoms: sleeplessness, with imaginary appearance of rats, mice, and all kinds of animals, which spring upon the patient, and to avoid them he creeps under the bedclothes; his manners, gestures, and speech, exhibit the greatest fear of the creatures that are pursuing him, he neither eats nor drinks; suffers from obstinate costiveness; trembles in every limb; staggers as if drunk in walking, and has pimply eruptions on the forehead, cheeks and nose; the pulse is slow.

DISTRESS.

See Grief.

Diarrhœa.

Diarrhœa belongs to those diseases which are commonly thought to be unattended by danger, and quite easily managed; but this is an erroneous impression, for, as in catarrh, the most fatal consequences may ensue from neglect or improper treatment. For instance, the sudden stoppage of a diarrhœa from the use of red wine, brandy, &c., containing ginger, pepper, and similar articles, is often followed by obstinate constipation which

threatens the patient with far more danger, and is much more painful than the former. It is equally improper, particularly with children, whose tender constitutions cannot withstand morbid influences, like the bodies of adults, to use to excess, infusions or teas of chamomile, elder, valerian, peppermint, and other similar domestic remedies; for most of them, when taken in large quantity, are not only uncalled for in diarrhœa, but greatly aggravate it by the addition of symptoms not previously existing; so that, for instance, the food passes undigested, &c. In homœopathic treatment, neither the one nor the other is to be feared.

Here I would also refer to an error which is occasionally a source of uneasiness to those unacquainted with homœopathic treatment; namely, the belief that many impurities remain in the body and occasion other diseases, if the diarrhœa is cured in a short time. This fear proceeds from the belief, that there must always be a quantity of impurities heaped up, when diarrhœa exists, and that these must be carried off by it: and therefore that it is a beneficial effort of nature to free herself from them. But this is a false view; for only in the rarest cases are there impurities previously existing, but they are first occasioned by the change in the intestines, which the diarrhœa brings with it, and this ceases as soon as the latter is cured. How many diarrhœas are produced in a few minutes by taking cold! From whence then can these impurities come which are thus at once discharged? How many of such diarrhœas are cured in a few hours by restoring the transpiration and general warmth, and has any bad consequence ever resulted from remaining impurities?

In cases where there are really impurities existing, and the diarrhœa arises from the efforts of nature to rid herself of them, there is always another disease in the back ground, of which this is the product, and here a homœopathic remedy, which exactly suits the symptoms, cannot cure the diarrhœa before it has removed the latent disorder.

1. We often meet with diarrhœa in children, without being able to account for it ourselves, and are unable to obtain by

questions any information concerning its particular cause. In such cases we are obliged to confine ourselves to the visible symptoms accompanying the diarrhœa; and I shall therefore adduce the remedies that have most frequently proved beneficial in ordinary cases, including those for children.

Chamomilla, 3d, is indicated when there is want of appetite, white coated tongue, thirst; cutting pains in the bowels, manifested by screaming and restlessness; desire to be carried, weeping, drawing up the limbs toward the abdomen; contraction, tightness and hardness of the abdomen, frequent loose evacuations of white mucus; watery and undigested stools, having the smell of rotten eggs; rumbling in the bowels, blue circles about the eyes, and violent belchings as if about to vomit.

Sulphur, 6th, is preferable for children who suffer from chronic diarrhœa which is commonly met with in those born of weak, sickly parents, who have been subject to eruptions, or when an improper, stimulating diet has been used, and in which the following symptoms are presented: bloody or slimy evacuations, with cuttings in the bowels; burning and straining in the rectum, chiefly at night; soreness of the anus, privates and insides of the thighs, on which parts purple eruptions are frequently met with, which sometimes gradually overspread the whole body, and produce great emaciation or atrophy.

Mercurius solubilis, 6th: offensive breath, inclination to vomit, or vomiting accompanying the diarrhœa; cutting pains in the bowels with screaming; the patient bends himself almost double; frequently urging and pressing to stool, without voiding anything, with cold sweats; trembling; green watery or slimy evacuations, at times of bilious matters mixed with blood; soreness of the anus, and great debility.

Ipecacuanha, 3d, when there is paleness of the face, with blue circles around the eyes, and general debility; desire to lie down; coldness; crying out; the child is cross at everything; drowsiness; severe pains in the abdomen, causing the child to scream out, throw itself about, and lie extremely restless; profuse collection of water in the mouth; distention of the abdomen,

frequent colicy pains; ineffectual efforts at stool, or small loose evacuations of a citron or yellowish color with violent pain in the rectum; very thin, frothy, slimy, offensive evacuations; at times convulsions. Frequently in diarrhœas of this kind, *Rheum*, 3d, is serviceable, especially when there is thin, pappy, sour smelling stools, with cutting pains before an evacuation, and bitter taste in the mouth.

2. *From fright, anger, etc.*—*Opium*, 6th, if given immediately will be found most beneficial in diarrhœa occasioned by sudden and powerful mental emotions, such as fright, joyful surprise, anxiety; also in diarrhœa from exposure to cold after being overheated, &c. But, if this remedy cannot be given at the onset, *Chamomilla*, *Mercurius solubilis*, *Pulsatilla*, *Veratrum*, *Rheum*, *Ignatia*, *Phosphoric acid*, or any other appropriate remedy, may be resorted to.

3. *From taking cold.*—Diarrhœas from cold, which are unattended by pain or any other symptoms than frequent watery stools, are most readily removed by *Dulcamara*, 3d.

China, 6th, when there is severe cutting or cramplike pain in the bowels, accompanied by pressure and constriction, immediately followed by diarrhœa with burning pain in the anus, as if from a sharp substance; very copious evacuations of a thin, brownish matter, with pain in the bowels, belching, rumbling and feeling of weakness in the abdomen.

Chamomilla, against severe pain of the bowels, so violent that the patient is compelled to be moving or throwing himself about constantly; sensation as if the whole abdomen were hollow, with constant motion in the intestines; blue circles about the eyes; nausea; vomiting; flatulence; pain in the abdomen, as if something like a large ball were rolled up; tearing pains; evacuations watery or slimy, and having the odor of rotten eggs.

Mercurius solubilis, 6th, in diarrhœa occasioned by cold, especially from exposure to night air, accompanied by pinching pain in the pit of the stomach, with rumbling and feeling of weakness, as if a diarrhœa were coming on; cutting pain in the lower part of the abdomen, which is quite cold; nausea and

loathing, trembling and chilliness; at first sudden and frequent pressure to stool, without passing anything, then copious green, watery evacuations, attended with faintness; frequent evacuations, consisting of blood and slime.

4. *From disordered stomach.*—Diarrhœa arising from disordered stomach is often most speedily and certainly relieved by *Pulsatilla*, 12th. *Coffea* in general is only serviceable in a few cases, as it is almost universally drunk as a beverage. *Nux vomica*, too, is much less valuable according to my experience in diarrhœas than *Ipecacuanha*.

Coffea, 3d, is serviceable in diarrhœa arising from disordered stomach in persons not habituated to its use as a beverage, and where the following symptoms are presented: loss of appetite, with a feeling of dryness and moderate heat of the tongue, without thirst; bitter or saltish taste in the mouth, without disgust of food; eructations, tasting like rotten eggs; hiccough, nausea, inclination to vomit, or vomiting; fulness in the lower part of the abdomen, cutting pains in the abdomen, flatulence; rumbling in the intestines with urging to stool; restlessness; frequent attacks of diarrhœa. Drinking a cup of black coffee will also often effect a cure. But should not the diarrhœa be entirely removed by this remedy, a dose of *Antimonium crudum* will generally effect it, especially if pap-like stools, bitter taste in the mouth, eructations after eating, cutting pain in the bowels, rumbling and rolling in the intestines remain.

Nux vomica, 12th attenuation for children, 6th for adults, should be given: if there is reason to believe, as is very often the case, that the excessive use of coffee as a drink, is the cause of the depraved stomach, and consequent diarrhœa and the following symptoms are presented:

White coated tongue; dryness of the mouth; pain in the throat as if raw and sore; rough, scraping sensation in the throat; heartburn; loss of appetite; clammy, disagreeable taste in the mouth, almost as after eating carrots; sour taste after eating and drinking; hunger and yet loathing of food; particular aversion to bread; collection of water in the mouth; nau-

sea, copious eructations of a bitter or sour fluid, with sensation of pain at the pit of the stomach; violent pressure in the stomach, with distention of the abdomen, and sensitiveness at the pit of the stomach from touch, or motion; vomiting; tractive, tearing or cutting pain in the region of the navel, which extends from below upwards and excites nausea; ineffectual efforts at stool; stools consisting of slime and blood, with unpleasant rumbling in the lower part of the abdomen; slimy evacuations, and soreness in the rectum.

Pulsatilla, 12th attenuation, is the most suitable remedy when disordered stomach is occasioned by too free use of pork, mutton, butter and spoiled fat, and the following symptoms occur: loss of appetite; disagreeable slimy taste in the mouth, as if from putrid flesh, with hawking and spitting; empyreumatic or burning taste in the mouth; offensive breath; sweetish taste of the food; coated tongue; warm, bitter rising in the throat; bitter eructations, putrid taste of meat; sour taste of bread; nausea with chilliness, even during sleep; vomiting, chiefly at night, with burning in the throat; but little thirst, shortness of breath; flatulence, particularly at night; stools consisting of yellowish white mucus; greenish evacuations, with cutting pain in the bowels, and sharp, biting pain in the rectum.

5. *From vexation.*—*Chamomilla*, 3d, in diarrhœas, caused by vexation, and accompanied by bilious vomiting of green matter; bitter taste in the mouth, and bitter eructations; cutting pain in the bowels; fulness at the pit of the stomach; general debility; redness of the face, with pressive headache; copious evacuations of green, watery, hot, and very offensive substances. *Bryonia* should be given when after every meal there is griping pain in the abdomen.

The dietetic treatment consists in the application of dry external warmth, dry poultices of meal, hot flannel cloths, &c., upon the abdomen and soles of the feet; warm, mucilaginous drinks of oaten gruel, barley water, warm beer without spices, and the avoidance of medicinal infusions (balm, chamomile, &c.).

Dropsy. Hydrops.

A collection of watery fluid in the meshes of the cellular membranes is called Anasarca or General Dropsy. When the collection is found in some of the natural cavities of the body, as the chest (Hydrothorax), abdomen (Ascities), &c., it is termed Special or Partial dropsy.

There are certain characteristics which are common to almost all forms of the disease; these are diminished secretion of urine, œdema (watery swelling of the feet and ankles), a paleness of surface with laxity of muscular fibre, and a peculiar expression of countenance, which has been termed *leucophlegmatic*.

Causes.—These are numerous; an obstruction to the free circulation of the blood in any large viscus, as the liver, lungs, or heart, either from mechanical pressure, or in consequence of disease, may give rise to dropsy.

But perhaps one of the most frequent causes of dropsical effusions, is repeated bleedings by the lancet in the hands of indiscreet old-school physicians.

General Dropsy, Anasarca,

Is characterized by general swelling of the body, paleness, softness, loss of elasticity and coldness of the skin. When the swelling is partial, it is called *œdema*. The swelling most generally commences in the lower extremities, first of the feet and ankles, whence it gradually extends to the whole body. It is greatest in the evening, when the individual has been on his feet during the day, and is scarcely perceptible in the morning. This is owing to the gravitation of the fluid from the upper parts of the body, which takes place with facility through the different parts of the cellular tissue. By pressing with the thumb or fingers on the swollen parts, a depression is made which remains for a long time. This is owing to the fluid being forced by the pressure into the neighboring parts of the cellular membrane, and the depressions do not disappear until the cells, from which it has been pressed, become refilled.

Treatment.—Arsenicum, Bryonia, Camphora, Cantharides, China, Dulcamara, Kali carbonicum, Mercurius solubilis, and *Phosphorus,* are the principal remedies.

Arsenicum is indicated in general dropsy when accompanied by excessive weakness and general prostration of strength; earthy or pale, and greenish color of the skin, especially in the face; red and dry tongue; great thirst; coldness of the extremities, and pains in the back, loins and extremities. It is particularly valuable in *œdema* of the feet.

Bryonia, against œdema of the feet and anasarca; the swelling of the feet is increased by day, and diminished at night.

Camphora: anasarca, accompanied by red urine, which deposites a copious sediment.

Cantharides, in dropsy attended with irritability or atony of the urinary organs.

China, in general dropsy, consequent upon profuse hœmorrhages; also when accompanied by disease of the liver or spleen. It is particularly suited to dropsy occurring in women of advanced age.

Dulcamara, against anasarca resulting from sudden check of perspiration by exposure to cold or damp air; or when attended by thirst, violent nocturnal heat, with great agitation, scanty and offensive urine, eructations and emaciation.

Mercurius solubilis, against anasarca, accompanying disease of the liver; with oppression of the chest; general heat and perspiration; short, hacking cough, and anguish.

Phosphorus, especially in dropsical swellings of the feet, hands and face. *Kali carbonicum,* against anasarca, particularly when occurring in aged persons, more especially women.

Abdominal Dropsy. Dropsy of the Peritoneum. Ascites.

This form of dropsy is known by enlargement of the abdomen, commencing below and gradually ascending upwards, until the abdominal parietes are, at times, so distended, as to become extremely thin, and almost transparent, with tortuous veins dis-

tinctly to be seen in various parts. If the hand or extremities of the fingers be placed on one side of the abdomen below the level of the fluid, and the opposite side be struck with the other hand, a feeling of fluctuation is perceptible. The only inconvenience complained of by the patient is the feeling of weight in the lower part of the abdomen, until the accumulation of fluid pressing upon the diaphragm excites dyspnœa or difficulty of breathing. There is generally in this, as in other forms of dropsy, diminished secretion of urine, dryness of skin, &c.

Treatment.—The following medicines are the most serviceable in this form of dropsy: *Arsenicum, China, Mercurius solubilis, Sulphur, Bryonia, Kali carbonicum, Sepia,* and *Ferrum metallicum.*

In ascites occurring in consumptives: *Arsenicum, China,* and *Kali carbonicum.*

In that resulting from excessive use of spirituous liquors: *Arsenicum, China, Sulphur.*

That arising from great loss of blood, or other debilitating losses: *China, Ferrum metallicum, Sulphur,* and *Mercurius vivus.*

When caused by abuse of mercury: *China* and *Dulcamara.*

When following intermittent fevers: *Arsenicum, Dulcamara, Ferrum metallicum, Mercurius vivus,* and *Sulphur.*

For more particular indications, consult the preceding article, "General Dropsy" or "Anasarca."

Dropsy of the Chest. Hydrothorax.

This disease may affect both sides, or but one side of the chest. There is difficulty of breathing, which is proportionate to the quantity of fluid effused with inability to lie on the affected side; and when both sides are implicated, scanty respiration, and difficulty of breathing, except when in the sitting posture, energetic action of all the respiratory muscles, and great anxiety of countenance. There is generally, too, more or less swelling of the feet and ankles, and the ordinary evidences of dropsy.

Causes.—These are the same as those of dropsies in general, though perhaps it is more commonly symptomatic of disease of the heart or lungs.

Treatment.—The principal remedies are: *Arsenicum, Bryonia, Carbo vegetabilis, Kali carbonicum, Lachesis, Mercurius solubilis, Spigelia, Aconite.* With reference to the *cause,* and particular symptoms ordering their selection, see the two previous articles, "General Dropsy" and "Abdominal Dropsy".

Dysentery.

Under this name we understand a complaint, in which fluids of various kinds are evacuated from the rectum, attended with violent cutting pains in the bowels, tenesmus or straining, and fever. The disease usually sets in with loss of appetite; pressure about the stomach and abdomen; nausea, disposition to vomit, dirty coated tongue; bad taste, flatulency, tendency to diarrhœa, disturbed sleep, drawing pains in the limbs, shivering, chilliness and hurried pulse. After a longer or shorter duration of these precursory symptoms, the evacuations become more frequent, and are occasionally of a bright red color, but mostly consist of mucus, or other substances mixed with blood; these discharges are attended with most painful gripings and colicy pains, of a tearing and cutting nature, at first generally in the region of the navel, whence they spread over the whole abdomen, and immediately precede each evacuation. These last are accompanied with a very painful straining (tenesmus) on the rectum, which does not cease at once with the evacuation, but continues for some time with a feeling as if there were still more to be discharged. The accompanying fever begins with moderate, but repeated chilliness, followed by some degree of heat. The disease makes its appearance usually towards the end of summer or beginning of autumn, and mostly follows a long and intensely hot summer. It is occasioned by the use of unripe fruit, by pulse or other vegetables tainted with mildew, and by sudden vicissitudes of heat and cold.

If the disease appears in unhealthy, marshy neighborhoods

or if it is epidemic, or affects many persons at the same time, a dose or two of *China*, 6th attenuation, will usually effect a cure. When attended by much fever and pain, it is best always to commence the treatment with one or two doses (three or four hours apart) of *Aconite*, followed by *Chamomilla*, 3d, or *Pulsatilla*, 6th; the latter particularly if there be much mucus in the evacuations. If these last remedies are insufficient, and the stools consist of mucus mixed with blood, *Mercurius solubilis* must be given and may be repeated every three hours.

In the more violent cases, this preparation of mercury may not always answer, it will then be necessary to give *Mercurius sublimatus corrosivus* in the 12th attenuation, repeated three or four times a day.—In very severe, deep-seated colicy pains, *Colocynth*, 12th, must be given, three hours after the medicine last directed. The chief remedy in the so-called autumnal dysentery, besides *Mercurius sublimatus corrosivus*, is *Colchicum*, 6th, which must likewise be given three or four times a day.

Fruit of all kinds, and acids, must be entirely avoided in this disease. If the remedies above mentioned are not sufficient for removing the complaint, let there be no delay in sending for an experienced physician.

Dysmenorrhœa, Painful Menstruation, Menstrual Colic.

The remedies which are most useful in painful and difficult menstruation are: *Belladonna*, *Chamomilla*, *Pulsatilla*, *Nux vomica*, *Lachesis*, *Coffea cruda*, *Cocculus*, *Causticum*, and *Veratrum*.

Belladonna is indicated when there is severe pain in the back, and strong bearing down in the lower part of the abdomen, as if the parts were about to fall out, accompanied with violent congestion of blood to the head, confusion of sight, frightful visions, great disposition to bite, screaming, redness and bloated appearance of the face, and frequent ineffectual efforts to evacuate the rectum with much straining.

Chamomilla, when the pains resemble labor pains, with pressure from the small of the back toward the front of the abdomen and downward; colic, with tenderness of the lower part of the abdomen when touched, and discharge of dark-colored and coagulated blood.

Pulsatilla is serviceable when there is a feeling of heaviness as if from a stone in the lower part of the abdomen; violent pressure in the lower part of the abdomen and small of the back, attended with a sensation of drawing and numbness extending down the thighs; the latter feeling is felt more particularly when the patient is in the sitting posture; pressure in the rectum with ineffectual efforts to evacuate; frequent inclination to pass water.

Nux vomica is most useful in relieving writhing pains in the abdomen, accompanied by nausea, or pains in the back and loins as if dislocated; feeling as if bruised on the bones of the pubis; spasms and pricking in the lower part of the abdomen; paroxysms of pressing and drawing pains, frequent desire to evacuate the bladder, and sensation of distention in the bowels as if they would burst.

Coffea cruda will be beneficial if there be much nervous excitement; colic, with feeling of fulness and pressure in the bowels, and violent spasms which extend to the chest; delirium; wringing of the hands, grinding of the teeth; violent screaming; difficulty of breathing and groaning; coldness of the whole body, and numbness and stiffness.

Lachesis is of great value in difficult menstruation, especially when accompanied by diarrhœa with violent tenesmus, which generally precedes the menstrual flow, and continues after it has ceased.

Cocculus, when there are spasms in the abdomen, cramps in the chest; flatulency; nausea and faintness, and pressive colic.

Causticum, if there be cutting pains in the small of the back, spasms in the abdomen; hysterical symptoms, and yellowish complexion.

Veratrum, against menstrual colic, with nervous headache;

nausea and vomiting; coldness of the hands, feet or nose; great weakness; fainting fits and diarrhœa.

The foregoing medicines may be given dry or dissolved in water, and repeated every hour until the patient is relieved, or another is selected.

Drowning, apparent Death from.

There is hope of resuscitating a person apparently drowned, when he has not been in the water longer than five minutes; if a quarter of an hour has elapsed, restoration is much more doubtful. But every thing depends on prompt and suitable attempts at resuscitation, and the patient is certainly often lost by want of method, embarrassment and undue activity.

As in very few cases of this kind death results from the entrance of water into the lungs or stomach, but in most of them from paralysis of the nerves of the brain, the too common practice of placing the person on his head, as if emptying a water-cask, is certainly wrong. The most suitable way is to place him in a horizontal posture in a warm place, and undress him entirely, then dry the body with warm flannel-cloths. Let him then be placed on the right side, the head and breast somewhat raised, whereby the water which has entered into the mouth and windpipe may have freer outlet. The mouth and nose must be cleansed from mucus and other impurities. To increase the external warmth, there should be warming pans laid to both sides near the spine, and also to the feet, but the pit of the stomach must be covered with warm cloths, or bladders filled with warm water, and the soles of the feet, joints, pit of the stomach, and spine, rubbed by turns with warm flannels, or with a hard brush. Spirits of hartshorn, naphtha, or other stimulants, should be applied to the nose, the skin rubbed with cloths, moistened with spirituous liquors, and the soles of the feet, and also the mucus membrane of the nose, mouth and throat, tickled with a feather. These applications, however, are to be used successively, and not all at once.

A shower-bath upon the pit of the stomach; dropping melted

sealing-wax on the skin, and likewise a bath of warm ashes, mixed with salt, and in which the drowned person should remain several hours, may also be serviceable.

If warmth of surface, respiration, and other signs of life appear, the patient must be put in a warm bed, and have a cup of weak green tea with a few drops of rum, to induce perspiration.

The attempts at restoration must be persevered in for several hours, and only discontinued when the rigidity of death takes place.

DYSPEPSIA.

See disordered and weak Stomach.

E.

Earache (Otalgia).

This affection may arise either as a consequence of another disease, or it may be a primary malady. The first is frequently the case in toothache, and vanishes as soon as this ceases. The second often takes place in persons having a predisposition to this form of disease, children especially, from suppressed eruptions, sleeping on the ground, taking cold, &c., and is so violent that it requires medical aid, which must be varied according to circumstances.

Mercurius solubilis, 6th, is indicated when there is tearing pain in the ear and cheek of the same side; stitches in the inside of the ear; pressing pricking pain in the ear with a feeling of coldness; spasms and twitching in the ears; sensation of pricking and burning; burning even in the cartilage of the ear.

Arnica, 6th, is useful when there is a predisposition to this affection with general irritability of the nervous system, which is excited by the most trifling circumstances, and where the following symptoms take place:

Pinching and pricking in and behind the ear; tearing pain with a feeling of heat; painful sensitiveness to loud and ringing sounds.

Chamomilla is indicated when cold and repressed perspiration is the cause, and the following symptoms occur: Tearing pains in the ears; isolated stitches in the ear with irritability of temper, and disposition to resent trifles; dryness of the ears for want of ear-wax.

Pulsatilla is generally most beneficial in persons who suffer from tearing, or spasmodic pains in the ear, which is manifested by single jerks through the internal as well as the external ear, with heat and redness of the outer ear; painful feeling in the ear, as if something were forcing itself out. The pains often extend to the whole side of the face. Loss of sleep, disposition to shed tears, and chilliness, especially in sensitive persons. This remedy is particularly adapted to this kind of earache when occasioned by taking cold.

It is, however, to be borne in mind that no benefit will be derived from outward applications, and that even stuffing cotton in the ear is productive of no good.

A common domestic remedy, and one which though outwardly applied, nevertheless acts homœopathically, and has generally a good effect in children especially—is to wind a thread dipped in *Sulphur* several times around the external ear of the affected side, and let it remain until the pain has disappeared. I was lately induced, from a knowledge of this fact, to administer *Sulphur* internally, and according to my experience it acts as beneficially when employed in this way as when externally applied.

Ears, discharge from the, (Otorrhœa).

Discharge from the ears, which is mostly met with in children, is a very troublesome complaint, on account of the disagreeable smell generally attending it, and the uncleanliness to which the patients are exposed. We usually find this complaint in scrofulous subjects, after small-pox, scarlet-fever, and measles, and during dentition.

Sulphur tincture is the remedy which I have found to be most beneficial in this affection—a dose of one drop every other day.

Mercurius solubilis, 6th, will be most appropriate, if the dis-

charge follows an eruptive disease, in which case it is always very offensive, and occasions soreness and pimples about the ear; followed by *Hepar sulphur*, 6th; or at least these remedies should be given before the *Sulphur*.

Pulsatilla, 6th, will also be serviceable when the discharge succeeds a severe attack of measles.

As dietetic means are especially to be considered, the patient must abstain from the use of animal food, and every thing stimulating. The ear must also be cleansed several times a day with a soft sponge and warm water, and filled with charpie (lint) or cotton.

Ear, Inflammation of the.

This affection manifests itself as follows: The outer ear and the skin of the auditory passage becomes reddened and swollen, so that the latter appears much narrower than in the healthy state. A sensation of burning, itching, pressure, or constriction is experienced in the ear which may increase to the most severe earache; an attempt to introduce the finger into the ear is attended by the greatest suffering. At first the ear is dry, afterwards a thick mucus discharge takes place, followed by amelioration of the sufferings.

Pulsatilla, 12th, is the best remedy, and almost specific in this form of disease when the auditory passage is so swollen, as to be almost entirely closed, with severe pricking or tearing pains in the outer and inner ear; intense thirst; swelling and violent pain behind the ears; disturbed sleep, and loss of appetite. If the inflammation reaches a higher grade, extends to the inner ear, and excites burning or tearing pains in the brain with delirium, so that inflammation of the brain is threatened, the aid of a physician is necessary to guard against a greater evil.

Belladonna is generally the most suitable remedy in cases of this description, a dose or two of which may be taken while waiting the arrival of the physician.

Epilepsy (Epileptic Convulsions).

The symptoms of this disease are so well known that I shall spare myself the trouble of recapitulating them here, and I am even less disposed to give directions for its treatment; as the most experienced physician, with the greatest prudence, and most accurate knowledge of all the remedies required in its treatment, has often much to do to bring it to a favorable issue. It would therefore be useless for the laity to attempt its treatment. The chief remedies against this disease are: *Chamomilla, Ipecacuanha, Ignatia amara, Opium, Belladonna, Hyoscyamus, Stramonium, Veratrum, China, Cicuta, Stannum, Zincum, Cuprum metallicum, Calcarea carbonica,* &c. See the article "*Spasms.*"

Erysipelas. Rose. St. Anthony's Fire.

I should not have introduced this disease in this work, if I had not learned by experience that, particularly in the country, a physician is seldom consulted in its treatment, but on the contrary a variety of domestic remedies are made use of that are altogether unsuitable, and do far more injury than the directions for the homœopathic medicines suited to many cases.

By erysipelas is understood a partial, superficial inflammation of the skin accompanied by swelling of the part. The redness attending it, though generally of a deep hue, is often pale, and after a few days changes to a yellowish color; the redness, too, is not circumscribed, but is lost imperceptibly in the natural color of the skin, and is likewise radiating, shining and hot. The accompanying pain is of a pressive, burning and itching character.

Aconite is indicated at the commencement if the inflammation is very great, and accompanied by considerable degree of fever; and one or two doses will generally produce a marked improvement in both fever and inflammation.

Belladonna may be given with advantage after the *Aconite*, particularly when the erysipelas spreads in rays, and is attended

by a pungent pain, which is increased by the least motion of the parts affected.

Bryonia is preferable when the disease is located about the joints, and is more fixed, and the pains are also aggravated by motion.

When this species of inflammation attacks the face, there is often a tendency to the formation of vesicles or blisters. These are sometimes very dangerous, and on this account should not be treated by the laity without the advice of a physician, and also because this form of the disease is usually connected with other morbid affections of the abdominal organs, or with nervous symptoms, which cannot be properly understood by one unacquainted with medicine. I may mention however for the benefit of those persons who reside at a distance from a homœopathic physician, that when the disease assumes this form, *Rhus toxicodendron* is the remedy that is most generally serviceable and a dose or two of which may be given while waiting the arrival of the physician.

If there remains a disposition to frequent returns of this disease, it is generally obviated by a few doses of *Graphites*, 18th, repeated every other day.

Eyes, Inflammation of the.

Inflammation of the eyes is so often connected with other diseases, in which the exciting cause, the general health of the patient, and the age, at which the inflammation takes place, are all to be considered in the treatment; that I do not feel willing to entrust its management to the hands of the laity alone, without requiring them to obtain the advice of a physician, as otherwise I should do more harm than good. Nevertheless there are some inflamed conditions of the eyes, which, in the absence of a physician, may be treated at the beginning with suitable remedies.

1. *Inflammation of the eyes of new born children.*

The imprudence with which infants, even during the first few days after birth, are exposed to both natural and artificial

light, without considering that so sudden a change from day to night must be offensive and hurtful to the eyes of the young creatures, is commonly the cause of this disease. It may be known by the intolerance of light; slight redness of the edges of the eyelids, and eyes; at the same time there is a discharge of mucus generally yellowish, which glues the lids together, becomes more and more adhesive, and often purulent.

Aconite, 12th attenuation, will generally allay the inflammation when represented by these symptoms: it may be repeated every six or eight hours. *Ignatia*, 12th, is frequently useful after *Aconite;* repeated every 24 hours, and also in cases where the eyelids are turned out, much swollen and inflamed, with profuse secretion of mucus, and great intolerance of light. If diarrhœa accompany the inflammation, *Chamomilla* is worthy of trial.

In this form of disease the attention must be directed to the state of health of the mother or nurse, and to the regulation of her diet. The medicine may also be administered to the mother or nurse, as well as to the child. When the inflammation is more intense, these remedies are not always sufficient; in such cases a dose or two of *Sulphur* should be given, and after the lapse of two or three days, if the disease does not yield, a dose of *Calcarea carbonica* may follow.

This inflammation of the eyes, which may be of serious consequences, as it not unfrequently destroys the entire cornea, or so injures it, that vision is rendered impossible during life, I am not disposed to commit to the hands of a layman altogether, but have made these remarks, because there is danger to be apprehended by delay. Until the advice of a physician can be obtained, these remedies may be given.

2. *Inflammation of the eyes from difficult teething.*

Inflammation of the eyes is frequently attendant on difficult dentition, especially in weakly irritable children. As a remedy for this, when very severe, one or two doses of *Aconite* may be given in the beginning, at intervals of six or eight hours, in the dose of three to six globules; this remedy may sometimes be

advantageously alternated with *Chamomilla*. After the alleviation of the principal symptoms, *Calcarea carbonica* should be given in the 18th attenuation, a drop on sugar, or several globules, as it is one of the most effectual remedies against difficult teething. It may be repeated after three or four days.

3. *Inflammation of the eyes from the presence of foreign bodies.*

The introduction of foreign bodies into the eye may readily give rise to inflammation followed by defects of vision; in order to avoid as far as possible all bad effects they should be immediately removed by suitable treatment. The larger foreign substances are to be first carefully removed; the smaller ones, on the contrary, which cannot be taken out without producing great irritation of the eye, may remain undisturbed for the first hour or two only washing out the eye with a little fresh water, bandaging it, and giving, to allay the inflammation, one or more doses of *Aconite*. The removal of the irritating substance is more easily effected after some hours, if the eyes has been suffered to rest. Occasionally, the foreign substance may be removed by means of a camel's-hair pencil, or if it be fixed, by the aid of a small pincette. But if it still do not yield, and the inflammation has increased, a dose or two of *Sulphur* must be given. Against the occasional discharge of tears in consequence, a few globules of *Euphrasia*, 3d, are serviceable. If nevertheless the inflammation increases, a longer continuance of self-treatment is not advisable, but the cure must be committed to an experienced physician.

4. *From a Stye.*

This is an inflammation of a gland found in the eyelid, which occurs very often in scrofulous subjects, and is frequently renewed. Its duration is much shortened by a few doses of *Pulsatilla*, which may also be repeated at longer or shorter intervals, with a view to prevent its recurrence. A very good remedy in this affection of the eyelids, is *Aurum* (gold) in the 2d to the 6th attenuation, especially when obstinate obstruction of the nose, with ulcerated nostrils, as well as swollen and reddened

eyes are connected with it. If, in consequence of frequently recurring inflammation of the glands of the eyelids, indurations remain, which have a tendency to fresh inflammation, but still have not fully formed, *Staphysagria* is generally the most suitable remedy. But as every scrofulous subject is more or less liable to other diseases, for which *Pulsatilla* is not always the most suitable or only remedy, it is easily conceivable that this article is not always best adapted to these complaints of the eyes, and that others are often required for its cure and prevention, of which I shall only mention here *Arsenicum* and *Sulphur* as among the best.

5. *Catarrhal inflammation of the eyes.*

The symptoms of this disease are: redness of the margins of the eyelid and of the eye itself, more towards the corners; a sensation of burning and pressure, as if sand were between the eyelids; intolerance of light; increased secretion of tears, accompanied by ordinary symptoms of catarrh, with or without fever, and a constant dry cough. Although *Aconite*, in many cases, can do but little against this affection, it is nevertheless always advisable to give it at first with a view to check the progress of the inflammation, and after 24 or 36 hours to follow it with a dose of *Nux vomica*, which for the symptoms above described, is generally the most suitable remedy.

Chamomilla is beneficial, particularly in children, in the dose of two or three globules of the 3d attenuation, when the white of the eye is much inflamed, no tears are shed, but on the contrary a dryness is perceived on opening and shutting the eye, with ulceration and adhesion of the eyelids and slight catarrhal fever.

Belladonna, on the other hand, is indicated after *Aconite*, when there is redness of the margins of the eyelids, especially in the angles; a sensation of burning; dread of light; dryness of the eyes; increase of pain by exposure to light, and redness of the whites of the eyes, as if the small vessels were injected and spread over them. If, with these symptoms, there be a

severe nasal catarrh which makes the nose sore, and inflamed pimples break out around the nostrils and on the lips, with a short, dry, hacking, periodical and spasmodic cough, *Belladonna* will also be found useful.

Euphrasia is well known to be generally useful in inflammatory affections of the eyelids, and its almost specific efficacy in catarrhal inflammations of the eyes is strikingly preeminent, when accompanied by a severe catarrh, with painful pressure in the eyes, increased secretion of tears; and particularly when the white of the eye is inflamed, and there is severe headache with increased catarrhal discharge, and fever. The most suitable attenuation is the 3d.

Ignatia is also appropriate in this variety of inflammation when there is profuse catarrhal discharge, great aversion to light, with little or no inflammation of the whites of the eyes, pressure in the eye, and copious flow of tears.

Pulsatilla, 12th, is likewise valuable in this form of disease, when the edges of the eyelids are inflamed, with redness of the cornea; pain in the head over the eyes, and exacerbations of symptoms in the evening.

In the greater number of cases of inflammation of the eyes, of whatever nature they may be, *Aconite* is sufficient against the incipient stage, and may be followed after the abatement of the inflammation and fever, by *Sulphur*, or *Hepar sulphuris*; which are particularly indicated, if after several days' use of one or more of the remedies above mentioned, the inflammation is not removed, but becomes protracted. After giving a single dose of one of these medicines its effects should be waited for 24 or 36 hours, before a second dose is given, but if there be some improvement, manifested by the abatement of pain, quietude of mind, &c., we should delay still longer—as long as there are evident signs of improvement; but on the other hand if there be little or no improvement, the same medicine should be repeated after 24 hours, or even sooner. With respect to the use of the individual medicines mentioned, the following are the chief indications:

Aconite, against burning, dry heat; restlessness; delirium from pain; fearfulness; anxiety; violent fever with full, quick pulse, and mitigation of the sufferings on motion.

Arsenicum, against emaciation; yellow dirty complexion lividity of the edges of the eyelids; violent thirst; great prostration of strength; diminution of pain by external warmth, or at night by going about, anxiety, fear of death, or capricious temper.

Belladonna, against violent, pressive pain in the forehead over the eyes; heavy sleep, or fearful apprehensions on waking; great terror; despondency, violent thirst, burning hot dry skin, with chilliness, or headache, or inclination to weep.

Chamomilla, against nightly exacerbations with burning heat and perspiration; despondency; restlessness; moaning; sighing; starting up suddenly in sleep, and green or white mucous stools.

Euphrasia, when there is headache with dread of light; copious flow of tears; great drowsiness during the day; predominant chilliness; night sweats; taciturnity, or disinclination to speak.

Ignatia, when there is pressive pain in the head, from within outward, especially in the forehead and at the root of the nose, and somewhat relieved by bending forwards; fearfulness; temper at one time humorous, at another sad.

Nux vomica, when the sufferings are increased in the morning soon after waking, after eating, and by mental exertion; and there is costiveness or ineffectual efforts at stool; aversion to exercise in the open air; character zealous, rash, disposed to find fault, or quarrelsome and contradictory.

Pulsatilla, in mild and phlegmatic temperaments, disposed to weeping or inward grief, with sleeplessness; chilliness and alternate flushes of heat.

These general observations on the remedies above mentioned, are characteristic, and will be useful in any disease, where the foregoing medicines are indicated. I would advise therefore that they obtain due consideration, or at least be recurred to before administering any one of the remedies.

The frequent return of catarrhal inflammations of the eyes, in every instance points to a deeper seated malady, that by the most insignificant atmospheric influence, is easily aroused, and throws itself again on the parts previously affected and most excitable. The removal of such susceptibility of the eyes to external irritants, must be committed to the homœopathic physician, as they often require for their cure a long and discriminating treatment, which laymen are unable to give them.

6. *Scrofulous inflammation of the eyes.*

This is the most common of the affections of the eyes, and is distinguished by its obstinacy and repeated attacks, above all other inflammations of the kind. Its treatment is difficult and therefore not to be undertaken without the assistance of a homœopathic physician.

In the onset of the disease, when it closely approximates to the catarrhal inflammation, with a burning sensation and slight redness and swelling of the margins of the eyelids; discharge of acrid tears occasioning soreness; intolerance of light, and a quantity of purulent mucus is secreted between the eyelids—the remedies mentioned in the preceding disease, are all worthy of consideration.

Belladonna is especially suitable when the ball of the eye is inflamed, and the intolerance of light obliges the patient always to seek a dark place, as the entrance of the rays of light into the eye, occasions the greatest degree of pain and pressure. After a few doses of *Belladonna*—at intervals of eight to twelve hours. —*Sulphur* is the next suitable remedy, of which one dose may be given daily. This article must also be recurred to, when in an attack of this kind watery pustules appear on the ball of the eye, which quickly change to small ulcers, and leave cicatrices behind which materially obstruct vision. If the dread of light be only an affection of the nerves of the eye, that is, if no active inflammation be present, *Conium* is more serviceable than *Belladonna*, and afterwards *Sulphur*, or *Hepar sulphuris*.

Rhus toxicodendron is particularly beneficial in this affection

of the eyes, when it recurs often, or leaves the eyes exceedingly irritable. It should be given twice a day—morning and evening. But should this remedy not be sufficient of itself for the removal of the disease it may be alternated daily with *Arsenicum*, in a high attenuation, that is, one day a dose of *Rhus toxicodendron*, and the next a dose of *Arsenicum*.

7. *Film, or specks on the eye.*

The above described diseases of the eyes frequently leave behind them specks or films on the eye; if these are not so considerable as to obstruct the sight, they may be left alone; on the contrary, if they are seated in the pupil, their removal is very desirable. The two principal medicines for this purpose are *Conium* and *Cannabis*, the first taken once daily, for six or eight days, followed by the second in the same way. If these are insufficient to remove the disease, they may be succeeded by *Sulphur* and *Calcarea carbonica*, of which alternate doses may be given daily.

EXERTION, INORDINATE.

See Fatigue.

Eruptions in general.

It will suffice here to remark that in general those eruptions, attended with fever which suddenly appear on the skin, and run their course speedily are usually unimportant and free from danger; the efforts of nature alone being often sufficient for their removal. When they are violent in their character, the reader will find all that is requisite concerning them under their particular forms; measles, chicken-pox, &c. I shall in this place only make a few remarks on the dietetic regimen.

The nourishment allowed in the violent febrile eruptions, are gruels and a little wheaten bread and butter; if the fever is less violent, the light soups containing groats, pearl-barley, rice, sago, &c., are allowable; and when the fever is unimportant, even animal food, as venison, young poultry, tender beef, and mutton, with the usual, not flatulent, condiments in small quantity and

the avoidance of acids, fats, and spices. In these diseases the use of cooked fruits, in moderate quantities, are always beneficial. That the use of free air cannot be permitted in eruptive fevers, and even long after recovery must be avoided, is a rule too well known to require further discussion; nevertheless we must make amends to the patients for this deprivation by suitable precautions; the best substitutes will be a chamber of moderately warm temperature, regulating the bed clothes according to the wishes of the patients, and opening the windows at suitable times.

Aconite is generally the most suitable remedy in eruptive fevers, at the commencement, and it will in the majority of cases modify the violence of the fever very materially.

Excoriation.

This complaint is commonly met with in young infants; the best preventive is cleanliness; when it becomes bad, however, the following medicines will be found useful.

Chamomilla will, in most cases, be sufficient for its removal, when it has not been produced by the use of chamomile-tea, taken either by the mother or child, in which case *Pulsatilla*, *Carbo vegetabilis*, or *Ignatia amara*, should be given.

Mercurius vivus, when the excoriation is extensive, and there is yellowness of the skin, which *Chamomilla* has failed to remove.

Sulphur and *Carbo vegetabilis* in obstinate cases, which the foregoing remedies have failed to cure, will frequently be found efficacious.

Sepia, *Lycopodium*, and *Silicea* are also worthy of attention.

Bathing frequently with cold water, or with a weak lotion of *Tincture of Arnica*, will often remove this affection in its incipiency.

F.

Face, Scabs of, in Children.

The complaint generally attacks infants that are still at the breast. For the most part it appears first on the cheeks; the parts of the skin affected are red and hot, distended, shining,

elevated, and itch, making the child restless and causing it to scratch the diseased parts, within reach. The eruption consists of small pustules, which fill with a thin, transparent, yellowish lymph, soon burst, and form scabs, that disfigure the child very much. As the purulent secretion goes on, the moisture oozes out, and new pustules arise, which run together and join with the former, by which larger scabs are formed. The fluid underneath is very acrid. If the eruption extends to the eyes, they also become inflamed.

When the child is very restless, and tries constantly to scratch the affected parts, the eruption is generally of a very inflammatory character, and *Aconite* is then the best remedy for allaying the heat of the skin; and it may be followed in 24 to 36 hours with the 3d attenuation of *Viola tricolor*, which will soon remove the intolerable burning, especially if the itching be worse at night, and generally within 14 days very much relieve, and sometimes entirely restore the patient. If the improvement be slow, a second dose of the last mentioned remedy should be given. But if this medicine do not entirely cure the disease, *Sulphur* will effect it, provided it be not complicated with any other disease.

Recent experience has established the efficacy of *Sarsaparilla* and *Mezereum* in this form of disease; both in the third or fourth attenuation. The first is indicated when small pustules form on the face, and are torn open by the child, showing that they are of a burning, or itching nature. *Mezereum* is the most suitable remedy, when the eruption spreads and forms thick crusts, under which other moist pustules are continually reformed. The remedies selected may be repeated every three or four days.

Facial Neuralgia.

This affection consists of a violent pain, which mostly begins at a certain spot under the eye, or at times also before the ear, and spreads thence over one half of the face. It comes at irregular intervals, continues days and weeks, runs on to a fearful height, is often attended with twitching of the facial muscles, and is frequently exceedingly obstinate.

As the homœopathic treatment is directed to the peculiar kind of pain, as well as to its precise seat, and the disease is also mostly attended by fever, I shall here name some of the most eligible remedies, and advise those residing at a distance from a physician, to consult with him by writing.

Aconite is a most important remedy, when there is a crawling, burning pain, as if from a deep seated ulcer which comes on by starts, and is located in the cheek-bones, in the joint of the jaw-bones, and in the cheeks.

Belladonna is most suitable in cases of long standing which begin with an itching and tickling in the affected parts; the pain usually seated in bones of the cheek and nose, and confined to one side; frequently too it follows the course of the nerves distributed below the eye, and is so severe as to be almost unendurable; at times the pains are pricking and drawing, accompanied by a painful stiffness of the jaws and neck.

China is indicated, when there is pressing, sticking, or pricking pains of one side of the face and nose, which are aggravated by the touch, or are renewed without any apparent cause, and become fearfully severe.

Veratrum is indicated in drawing and tensive, or contractive and pressive pains on one side only, which come on at intervals, and drive the patient almost to distraction.

Arsenicum is serviceable, when the one-sided pain is mostly about the eye and temple, is of a burning or sticking nature, as if from innumerable red hot needles, and the whole face presents a sunken appearance.

I will add to these a few more remedies, not so generally used, respecting the curative effects of which in this form of disease I have now acquired perfect certainty. The first is *Capsicum annum*, 3d, when the pain experienced is of a fine penetrating, or burning, and tearing character, located in the nerves of the right cheek bone, and is aggravated by contact, and especially toward bed-time.

Mezereum is indicated, when there is a cramplike, numbness, or pressure on the right cheek bone which extends to the adjoin-

ing parts and often terminates in a violent tearing pain; it is also commonly followed by shuddering and chills.

Aurum, 6th, deserves attention, when the predominant pain is of a tearing and sticking character, and is increased by pressure; the patient complains of great irritability of all the senses, and of a peculiar susceptibility to pain, which may be excited even by thinking of it.

Colocynth is also useful in facial neuralgia, when the pains are tearing and constrictive, or burning and sticking; are located chiefly in the left side of the face, with swelling, redness and heat of the parts affected; and likewise when they are produced or aggravated by an internal gnawing grief or mortification.

Fainting.

Fainting of itself being the momentary loss of consciousness, and of the use of the muscles, is, for the most part, certainly not a dangerous malady, notwithstanding it excites in most people a good deal of solicitude, and a desire to afford relief; often too at the moment of the attack, which in many sensitive persons is of a high grade, and exceedingly obstinate, and difficult to mitigate or put an end to, is the proper time to lessen or remove entirely the disposition to a recurrence; and on this account I shall here direct what is to be done in such cases.

As persons while in a fainting fit are incapable of swallowing anything, medicines can only be administered by smelling; aid will often be obtained also by tickling the nostrils with a feather, and brushing the soles of the feet, or sprinkling cold water on the face, and especially by freeing the patient of all tight clothing.

Respecting the remedies, which may be given here with advantage, I would recommend in ordinary cases *Spirits of Camphor*. It may be applied to the nose and the temples, and the forehead bathed with it.

In cases of fainting occasioned by fright, *Opium* is more suitable in the 3d attenuation, given by olfaction.

Moschus is most appropriate for hypochondriacs; weakly and irritable men; hysterical females, and especially for chlorotic

girls, who are often subject to fits of fainting. It may be applied to the nose, or two or three globules of the 3d attenuation laid on the tongue.

China, 6th attenuation, will be most efficient, if the fainting be caused by debility induced by great loss of fluids; such as protracted nursing, frequent bleedings by the lancet, or hæmorrhages from other cause; copious discharges of semen (in coition or by onanism), long continued diarrhœas, &c. This remedy is also particularly serviceable in cases of general debility, and may be repeated every three or four days.

After the patient has come to, he should be suffered to lie still, as this is mostly the best way to regain strength. But all is not accomplished by this, and if the patient is to be radically freed from the evil, and secured against its return, a physician must be consulted on the chronic cause, or origin of the disease.

Fatigue, or Inordinate Exertion.

The effects of inordinate exertion of the body, by walking too much, by long continued exhausting labor, which induces sweating and debility, are most readily removed by taking a warm bath, and afterwards bathing the painful joints with a lotion of *Tincture of Arnica*—ten drops in half a teacupful of water. Should this not succeed, and the pain of the limbs continue a day or two longer, *Rhus toxicodendron* is the most appropriate remedy. If the exertion create so great a relaxation of the system that faintness is threatened, there is no remedy equal to *Veratrum*, a single dose of which will generally restore the patient.

Complaints arising from *excessive exertion of mind*, require for their relief one or more of the following medicines: *Nux vomica*, *Colchicum*, *Pulsatilla*, and *Sepia*. The one most generally serviceable is *Nux vomica*, 12th, a dose every other evening. If incessant night-work be the exciting cause, *Colchicum*, 6th, is the remedy. Occasionally also a dose of *Pulsatilla*, or *Sepia* is required.

Fatigue may be occasioned by violent emotions, severe and

long continued pain, watching, spasms, and in general by all over exertion of the brain and muscular powers. The patient mostly recovers his strength sooner or later, though not always without bad consequences, especially if exhaustion has been produced.

The fatigue following sickness, or severe pains and spasms is relieved by the same remedies employed for the removal of the primary disease, and to which I shall not therefore refer here; but speak only of the remedies most useful in fatigue after long journeys on foot, especially in summer, where great weariness and enervation of the entire body is brought on by the heat. This is most readily removed by washing the whole body with fresh water, first allowing a sufficient time for rest and cooling off, and quickly wiping it dry. If the feet only be fatigued by over exertion, they may be washed with a mixture of *Arnica tincture*, of the strength mentioned above. Fatigue from loss of fluids for instance protracted diarrhœa, long continued nursing, great loss of blood, night watching, &c., will be most effectually removed by *China*, 6th attenuation.

FEET, SORES ON.

See Ulcers.

Feet, injuries of.

In injuries of the feet from a blow, fall, bruise, mis-step, &c., followed by difficulty of motion in the foot or toes, with severe pain and swelling, the common treatment is rubbing with Opodeldoc or volatile liniment, or washing with wine, brandy, camphorated spirits, &c. None of these, however, are so serviceable as washing with a lotion of *Arnica tincture*—five to ten drops to an ounce of water. If there be an external wound with fever, a dose or two of *Arnica*, 3d attenuation, internally, is also beneficial while the external treatment is continued. If some of the large tendons have been torn, which often causes great pain, a surgeon should be called without delay, and until his arrival a dose of *Natrum muriaticum* may be given with advantage,

which will often almost instantly remove the pain, and induce a more speedy cure. *Ruta*, 3d, is almost specific in the so-called sprains of the foot, against which, however, I have also found *Rhus toxicodendron* very beneficial.

Feet, sweating of.

Sweating of the feet is a very great annoyance; I mean those clammy, offensive sweats, which are so enormous that the patient is obliged to change his stockings several times in a day. Against these very offensive sweats I have often given with advantage a few doses of *Nitric acid*, repeated every three or four days. If this did not entirely succeed, I gave daily a dose of *Baryta acetica;* and occasionally I had recourse to the alternate use of remedies. With the exception of these sweats the person is generally quite well, and therefore believes he can remove them without danger, by cold foot-baths, preparations of lead, &c. But the suppression is often followed by dangerous consequences, and consequently any one who labors under this complaint must be cautious in his attempts to suppress it. The best homœopathic remedy I have found, as well against footsweats as against the consequences of its suppression, is *Rhus toxicodendron*, repeated every three or four days. To aid the cure, wrapping the feet in blotting paper, or surrounding them with birch leaves, has often been of essential service.

Fever, intermittent.

Against this fever no particular remedy can be proposed in my opinion; on which account I have in both the preceding editions, excluded it from the number of diseases to be treated by the laity. Since that time, however, remedies have been recommended the efficacy of which I have been obliged in many cases, in justice to admit; I have therefore no objection to introduce them here. This fever consists of three stages, namely a cold, a hot, and a sweating stage, together called a paroxysm, and is succeeded by an interval of freedom from fever (apyrexia) during which the patient mostly feels well, but somewhat weak.

There are several types of intermittents; those most frequently met with are: the *quotidian*, in which there is a daily paroxysm; the *tertian*, in which there is a paroxysm every other day, and the *quartan*, in which there is a paroxysm every third day. Usually the paroxysms take place at the same hour each day.

The cold stage begins with stretching of the limbs, paleness of the face, blueness of the hands and finger nails, and gradually increases to a severe chill with shaking of the limbs, chattering of the teeth, &c., it often lasts several hours, during which time the patient cannot get warm. To this succeeds heat with burning and insatiable thirst, which likewise often continue several hours and then passes off with copious sweating.

The best mode of treating these fevers is as follows: To administer in the interval between the paroxysms or commencing even before the termination of the sweating stage—especially in daily intermittents—every three hours, a dose of the 3d attenuation of *Ipecacuanha*, so that about four doses may have been taken before the next attack, the last of the four two hours before the onset. During the fever no medicine unless it be a dose of *Aconite* should be given. In tertian or quartan intermittents the same remedy may be given at intervals of four hours. The *Ipecacuanha* may be continued in this way until within two hours of the third attack. But after this a dose of *Nux vomica* must be given in the evening.

Some cases I have successfully treated by *Ipecacuanha* alone; in others the *Nux vomica* was required. Others again were not removed by this mode of treatment; and their further management must be committed to the physician; for when the treatment above recommended fails, it is a sure sign that the cure of the disease is prevented by a more deeply seated malady, which demands other remedies for its eradication.

China is the chief remedy for this fever, particularly in damp, marshy places, which, if both the previous remedies have been inefficient, should be given, in the 12th attenuation, every three or four hours, till about three hours before the commencement of the next paroxysm.

Arsenicum, is also a valuable remedy, and deserves especial attention in intermittents which have been several times removed by *China*, but have constantly returned after the lapse of from eight to fourteen days. The low attenuations of this medicine are preferable; I give five drops in water three times daily, and increase the dose gradually up to ten drops.

Fever, bilious and gastric.

It will not be proper to separate these two forms of fever for the laity, as their distinctive signs are too subtile to be discovered by one unacquainted with medicine. I therefore place them together, and the more willingly as they frequently have similar exciting causes, on the consideration of which the right choice of the suitable remedy depends. The symptoms of fevers of this kind are: Alternating chilliness and heat with general debility; yellowish or whitish coated tongue; offensive breath; sour or bitter taste and eructations; loathing of food; nausea; vomiting; loss of appetite; costiveness or diarrhœa; clay colored or yellowish face; pressure and tightness under the ribs; headache, restlessness, and great thirst.

Aconite must be given first, if the fever is very violent, which is frequently the case in young, robust subjects, especially in the spring of the year; followed, after four to six hours, by *Nux vomica*, especially when there is oppressive headache with costiveness; vomiting of food with severe cramplike pain in the pit of the stomach, and under the ribs of the left side. *Ipecacuanha* deserves the preference, when there is severe vomiting and diarrhœa—two or three doses may be given at intervals of three hours, after which, if there is no improvement, *Antimonium crudum* should be substituted. *Pulsatilla*, repeated every three hours, is most suitable, when there is vomiting and diarrhœa, consisting chiefly of slimy or mucous substances, the patient complains of constant loathing, and inclination to vomit, with sleeplessness and tossing about at night, anxiety, &c. It is also appropriate when the remedies already given, have not entirely removed the sickness, and prostration of strength, debility, chil-

liness, want of appetite, &c., remain. In such cases I have also given, especially when accompanied by excessive night sweats, *Phosphoric acid*, 3d, every three hours with great advantage. If the disease is owing to a violent fit of anger, *Chamomilla*, repeated every three hours, is the chief remedy, particularly when there is a flushed face with dry lips and great thirst; coldness of the extremities; oppressive weight in the forehead; bitter bilious taste with a yellowish coated tongue; loss of appetite with tension of the abdomen, feeling of pressure in the stomach; loose green or mixed stools; restlessness and anxiety during sleep. *Ignatia* is indicated, when this affection is brought on by silent vexation, grief or shame. *Staphysagria* is to be given, when violent indignation is combined with anger. Again *Pulsatilla* is often proper, when *Chamomilla* alone has been inadequate. *Mercurius solubilis* is a valuable remedy in these diseases, when the evacuations from the bowels are green, acrid, or consist of mucus mixed with blood, attended by pressure on the rectum, anxiety and trembling with pain in the bowels, and frequent fainting fits.

Fever, miliary. Rash, &c.

This is a very common disease attacking all ages; it may be occasioned by suppressed perspiration, disturbance of digestion, or too free use of spirituous drinks, and at times by eating certain articles of food, for instance, crabs; sometimes, however, it occurs without any apparent cause. It is usually thought to be unattended by danger, and it is generally so in fact: although it may, when imprudently suppressed, by taking cold for instance, be translated to some more important part than the skin, and attended with very serious consequences. The rule that in this disease it is necessary to guard against cold, and keep warmer than usual, and the knowledge that a cure is effected by nature in many cases, though increased transpiration, has led both physicians and laymen to the conclusion, that it must be removed by inducing perspiration. Hence the patient drinks as much warm tea as possible, in order to bring about this result. But that this

treatment is not always successful, is evident, from the fact that one kind of miliary eruption comes out in the cold, and on the contrary disappears in the heat. Being kept too warm is not at all proper, as it increases the fever, excites it when not present, and prevents sleep. The patient need only guard against taking cold, and take one of the homœopathic remedies recommended below, suited to his condition.

Ipecacuanha will mostly relieve the symptoms which occasionally appear before the eruption is fully developed, and which appear to be of more consequence than they are in reality. The following are the most common: tightness of the chest; difficult respiration; dimness of sight; trembling; nausea; vomiting; cutting pains in the bowels; diarrhœa; general restlessness; fainting, &c. These symptoms show themselves chiefly in children, very sensitive and plethoric persons, and females.

Chamomilla will generally remove the most common form of this complaint, frequently met with in young children, especially when caused by taking cold; and which consists of red patches of round pimples about the size of a pin's head, not, at all, or but slightly, elevated, are constantly visible, and are not changed by cold or heat. At night especially it is attended by itching or biting, which prevents sleep; toward evening there is generally some shuddering, and at night moderate heat; in children it occasions great restlessness, fretfulness, crying, &c. *Sulphur*, 6th, is likewise beneficial in this species of rash.

Aconite will be useful in cases attended by much feverishness, or heat, followed in six or eight hours by one of the remedies above mentioned.

In the cases caused by taking cold, *Chamomilla*, if given in the evening, will mostly induce a moderate degree of perspiration by next morning, which should not be disturbed.

Pulsatilla, 12th, is indicated in cases, in which the eruption has been occasioned by disturbed digestion, or the use of some particular article of diet; and where it is not smooth, but assumes the character of *Nettle-rash*, and is accompanied by the following symptoms:

Red spots over the whole body, that are either smooth or flat, or raised in welts or ridges as from nettles, attended by a fine sticking or itching, as if from numerous flea-bites, and is especially troublesome towards midnight, hindering sleep; with loss of appetite, fulness at the pit of the stomach; frequent shivering; chilliness; irritability, fretfulness, moroseness, and weakness and numbness in the limbs.

Rhus toxicodendron and *Dulcamara* are also valuable in this species of eruption.

Nux vomica, 12th, is preferable in eruptions similar to the preceding, caused by excessive use of wine and other spirituous liquors, or which depends on some chronic disease, such as suppressed hæmorrhoids, &c., that appear from time to time, and affects only particular parts, as, an arm, a knee, &c., and consists of smooth red spots, attended by great itching, and followed by pain and soreness.

Felon. Whitlow. Panaris.

This is a painful inflammatory swelling generally situated at the end of the finger, which comes on without any apparent external cause, and after it is cured often soon attacks another, or appears again on the same finger. The domestic remedies used in this kind of inflammation, which mostly consist of irritating external applications, are almost always unsuitable, and not only retard the cure, but often aggravate the disease. It is much more easily and speedily managed by homœopathic remedies. A few doses of *Mercurius solubilis* may be first administered; followed, if it does not answer, by *Hepar sulphuris*, 6th. If after three or four days no favorable change is manifested in the disease, a dose of *Sepia*, in a high attenuation, is often of the greatest benefit. *Mezereum* is likewise frequently useful in obstinate cases which threaten the loss of a joint. *Silicea* is adapted to the worst forms of the disease where the tendons and bones are implicated, a few doses of which will often effect a favorable change.

Poultices of flaxseed, oatmeal, chewed bread, or bread and milk with a little saffron, may be applied advantageously; at times also the application of the rind of bacon is useful.

Flatulency.

This complaint is considered more fully under the head of "Colic". I shall here refer only to the milder cases which are unattended by cutting pains in the bowels, and are easily removed by medicine, and not those tedious ones that depend on hæmorrhoidal and other chronic complaints. Thus it often occurs that after eating certain articles of food, such as cabbage of various kinds, sourcrout, much fat, and drinking too freely of water, or fresh, not well worked beer, and similar errors of diet, a great deal of flatulency, is generated which is often partly thrown off by belching, partly by the bowels without occasioning pain, but yet distends the abdomen, impedes respiration, and is otherwise troublesome.

In these cases *China* is particularly serviceable; or in persons of choleric temperament *Nux vomica* may be preferable; and in females and persons of a quiet mild disposition, as also after the use of pork and other fat food, *Pulsatilla* is useful.

Fright.

Effects as injurious and often even more dangerous to health than those from anger may result from fright. It may be caused by any sudden and unexpected misfortune which produces an instantaneous excitement of the whole inner activity of the organism. In very sensitive and irritable subjects it requires a length of time to quiet the excited organism again, and even then effects are often left behind that are exceedingly troublesome and difficult to remove. It will therefore not be out of place to give the symptoms, and the most appropriate remedies in such cases.

The symptoms most frequently met with after fright are: Tearing pressive pain in the forehead; sour eructations; sour vomiting; disposition to lie down; breaking out of cold sweat;

feeling of weight in the abdomen with anxiety, inward heat and heaviness of the head; sudden stiffness of the whole body with shortness of breath; trembling of the limbs with spasmodic breathing; spasms of the whole body and twitching in the limbs with external coldness, and a sort of lethargic sleep with snoring, &c.

The symptoms here described are seldom all met with in one subject affected with fright, but some persons suffer more from one, and some from another symptom.

Opium, 3d attenuation, is the most suitable remedy for the first effects of fright (no matter what external symptoms are presented), and if it can be given immediately will often remove the effects entirely in a short time.

Sambucus must be given instead of *Opium*, if a considerable time, perhaps several hours have elapsed after the fright, without the patient having taken the latter. A drop of the undiluted tincture may be administered at a time.

Aconite is also one of the most efficacious remedies against the effects of fright, and will often succeed in allaying the nervous excitement after the above remedies have failed. It will in all cases be preferable to *Opium*, if the latter have not been given immediately.

Frost-Bite.

Persons apparently dead from exposure to cold may frequently be restored by appropriate medical treatment. The safest remedy is cold, which will soon restore the vital powers, if not altogether extinct; while heat applied would completely extinguish the last spark of life. The greatest prudence is requisite in the treatment of frozen persons, as the limbs and whole body are often so rigid that they may easily be broken by removal, by undressing, and the necessary manipulations. A most important rule, also to be observed in warming the patient, is to begin at a low temperature, and rise gradually to the higher. To effect this the clothes should be all removed, using the knife or scissors freely, and the entire body except the nose and mouth covered

with snow to the depth of one or two inches, which should be pressed firmly, and fresh snow added, as fast as it melts off. When snow cannot be had, ice-cold water is the best substitute, used as a bath, or by means of cloths wrapped round the body. After about an hour let him be taken out of the snow, and washed freely with melted snow-water, and endeavor gradually and carefully to move the limbs. This treatment must be continued until there are signs of returning animation, and then discontinued. The patient must now be wiped dry, and put to bed, where practicable, in a chamber moderately warm, and the pit of the stomach and temples rubbed with wine, and harts-horne or spirits of camphor applied occasionally to the nose. When the functions of life are fully restored, mild internal remedies are to be used, at first wine, or still better, strong coffee (the palliative effects of which in sudden attacks of disease requiring prompt assistance, for instance, sea-sickness, poisoning by laudanum, by white hellebore; in apparent death from drunkenness, suffocation, freezing, &c., have often been tested), afterwards gruel, broths, &c., are most suitable. If the patient complains of a want of feeling in any of the single members, as the nose, ears, hands, feet, they must be again treated as at first.

Frost-bite of individual parts of the body, which when winter sets in, causes itching, burning, chapping, bleeding, &c., is seldom removed by a single remedy, but several will be necessary to effect a cure. Those most generally serviceable are: *Nux vomica*, *Pulsatilla*, *Thuya*, and *Arnica*.

The *Tincture of Arnica* (five drops in a tablespoonful of pure rye-whiskey) is particularly useful against the inflammation, pain and itching from frost-bite: the affected parts may be bathed with it two or three times a day, or it may be applied by means of wet cloths.

Nux vomica is indicated in persons of active, violent temperament, when the parts are red and swollen with painful itching or burning. *Pulsatilla* and *Thuya* in persons of phlegmatic temperament when the sores assume a bluish red appearance. A similar treatment is required in the so-called "Chilblains" which

often become painful in summer after taking cold, errors in diet, &c. In this case the following remedies are most serviceable: when cold is the exciting cause *Dulcamara*, *Rhus toxicodendron*, and *Nux vomica;* when errors of diet, *Bryonia*, or *Pulsatilla;* when anger, *Chamomilla*, *Ignatia amara*, and *Colocynth*. To effect a radical cure in cases of long standing, *Sulphur*, *Nitric acid*, and *Petroleum* will be found most efficient.

G.

GIDDINESS.

See Vertigo.

Glands, swelling of.

These swellings are not always visible, but may be discovered by the touch of the finger; they consist of roundish, more or less hard bodies, in some cases of a stony hardness, from the size of a pea to that of a hen's egg. Commonly the tumor is without pain, even pressure on it excites but a dull pain, and the skin covering it, is not discolored. The tumor, however, may inflame and become painful and red.

As swelling of the glands in many cases is only the result of a general diseased state of the body, it is therefore only practicable here to mention a few of the remedies, which have proved most useful in isolated forms of the disease.

Dulcamara, 3d, is particularly useful against swollen and hardened glands of the neck and throat, unattended by other striking symptoms. It may be administered by giving one drop in water, or three or four globules daily, until the disease is entirely removed. When the glands are of a stony hardness, and fixed, with inability to move the neck, the alternate use of *Dulcamara* and *Conium* will be found of great advantage.

Mercurius solubilis, 6th, must be given when suppuration of the glands is threatened, and repeated morning and evening,

for two or three days; followed, if necessary, by *Hepar sulphuris*, 6th, in the same way. If this treatment should not succeed, there is often benefit derived from alternating these two remedies day about. Swelling of the glands occasioned by blows, bruises &c., will be removed by the timely use of *Arnica*, internally a dose every day, and externally by washing with a lotion of five to ten drops of tincture of *Arnica* in half a teacupful of water. In cases where a length of time has elapsed after the reception of the injury, and this remedy has not been applied, and the glands have also become very hard, *Conium maculatum* is preferable, repeated every three or four days; *Conium* is also the chief remedy against affections of the glands of the female breasts occasioned by blows or bruises.

If the glands begin to inflame, a dose of *Bryonia*, 12th, will often remove the evil; but if the inflammation assumes a deep red, erysipelas character, extending in rays, *Belladonna*, 15th, will be most suitable. Here also it may be necessary to have recourse to the aid of *Mercurius solubilis* or *Hepar sulphuris*.

When these tumors are numerous, or the patient labors under other complaints, the layman should not undertake their treatment without calling in the physician.

The regimen in this species of disease consists in keeping the affected parts warm, avoiding all spirituous and stimulating drinks and, if possible, daily exercise in the open air.

Gout. Podagra.

In common life the term *gout* is frequently applied to cases which are far from being such: it does not by any means consist in the wandering pains in the joints, which many people carry to the grave with them, without having once suffered from a real fit of gout. This is not the place to speak of the inflammatory gout and the occasional fatality of its symptoms, for it can never be safely entrusted to lay treatment. It will be proper however, to make some remarks about the shifting pains, for which the advice of a physician is not always obtained, and which nevertheless often lay the foundation of more serious suf-

ferings, and pass into true gout, when aided by a favorable, often trifling exciting cause.

These complaints indeed, when they have continued for some time and become fixed in the organism, do not yield at once, but require the frequent use of the proper remedies; they may however, by an appropriate selection of the medicines, be safely and radically cured.

I would also remark, that these tearing pains are often the result of drugs, especially the so-called domestic remedies, which have been improperly chosen and used in too great quantity. If people would cease to use these articles which they call domestic medicines and consider harmless, and use with the greatest want of consideration as to quantity, thus opening the way for more serious diseases, by the excessive quantities of the remedies, there would be at least one-half the number of patients less who complain of tearing pains.

One of these domestic medicines, which is in most common use, is *Valerian*, and this it is, which too often, and for a long time, leaves behind it these tearing pains in the limbs, and numerous other complaints. It belongs to the most powerful medicines which we possess, and should never be tampered with as an innocent tea, least of all for children, whose tender organism is much more susceptible to its action than that of grown persons.

Still more injurious to the human system is quicksilver which, under the names of *Calomel, Mercurius dulcis, Hydrargyrum muriaticum mite, &c.*, is given so plentifully. If it were known that half a grain of quicksilver taken by a healthy person to test its curative power acts on him for two or three weeks and longer, and creates an artificial diseased state, it might readily be concluded that these effects would be much greater on a diseased body, would continue longer, and must leave behind a disposition to repeated returns of this artificial disease. This then is the case, and there is nothing more common, than for children, to whom *Calomel* has been given in croup, to have black teeth, swollen glands, ulcers of the mouth, most obstinate inflamma-

tions of the eyes, atrophy or wasting away of the flesh, and debility; and for grown persons who have taken this medicine in syphilitic complaints, frequently to the amount of ounces, to be visited with long continued tearing pains, or even with gout itself, spitting of blood, complete destruction of the digestive powers, &c.

I would moreover take this opportunity to speak against the imprudent use of *Mezereum*, which is very often applied externally for the purpose of keeping up a perpetual blister, and even laid upon the parts already made sore. This article, when it is softened, gives out an exceedingly acrid juice, which is absorbed by the parts laid bare, and by long continued action on the system brings on tedious, irritable, violently acute and drawing pains in the bones and sinews. Would that the improper use of these powerful medicines was henceforth abandoned!

In cases of acute tearing pain, where neither Valerian nor quicksilver can be suspected as the sole or even partial cause, they serve as excellent domestic remedies, and I shall here direct their proper employment somewhat more distinctly.

Valeriana, 6th attenuation, is especially indicated in tearing, spasmodic, drawing, or cramplike pains, as well in the upper as in the lower limbs, which often change from one to the other, and is not confined to the joint, but attack the whole length of the limbs; they are worse during rest, while standing or sitting, or after exercise, and mostly relieved by motion; and also attended by a feeling of weakness and lameness in the affected parts. Frequently these pains are succeeded or accompanied by sticking or pinching pains which come on in the evening, and become very violent shortly before midnight; they often gradually abate, and then suddenly renew their attack again. These sufferings are mostly attended with general excitement of the nervous system, great sensitiveness to ordinary influences, anxiety and sleeplessness, and often accompanied with exacerbations of fever in the evening with a full, strong pulse. A few doses of this remedy will generally relieve the patient for a month or more, after which the pains often appear

again, but in a milder degree and may be again removed by repeated doses of the same medicine. If, however, they do not yield now and have changed their character, one of the following remedies will be more suitable.

Mercurius, 6th attenuation, is best adapted to drawing, tearing, sticking, burning or cramplike pains, occasioned by exposure to cold, damp air, and aggravated by the warmth of the bed; attended with chilliness, great prostration of strength, heaviness and weariness of the limbs, and with a puffy appearance of the skin on the hands and feet, or other parts affected, which renders motion difficult; also pains which usually come on about two o'clock in the afternoon, and seem to be seated in the bones, and especially in the joints, exciting in the latter, from time to time, painless throbbings, which extend from the joints even to the ends of the fingers and toes, causing general restlessness and disposition to move from one place to another. These throbbings often extend from the bones to the tendons and muscles, and give rise to pain, stiffness, difficult and painful motion.

It must not be expected, that the evil can be removed at once, as it in most cases returns frequently, though in a milder form. In these returns, when the symptoms are like those of previous attacks, the same remedy must be resorted to again which gave relief before.

The *Magnet* will be serviceable in drawing, tearing, obstinate, bruiselike pains, with numbness of the affected parts, which are mostly occasioned by exposure to a current of cold air, are worse towards evening, and particularly in the night,—and affect all the limbs. At times they are of a boring character, at others the part feels as if severely bruised, or as if the limb were dislocated; the pains often disappear suddenly for a short time, and reappear as quickly: sometimes the disease appears to be seated in the tendons and ligaments, at others in the muscles; it is likewise frequently accompanied by a feeling of coldness in the affected parts. The attacks often come on suddenly without any apparent cause; the pains are generally most severe in the articulations, rendering motions of the limb exceedingly difficult

and painful, and are aggravated by moving the parts. The application of the whole surface of the magnet for from five to ten minutes by passing it gently over the affected parts, will generally speedily remove the pains. If they come on again, let the magnet be used a second or third time, but for a shorter period, until the symptoms entirely disappear or assume another character.

Bryonia, 12th attenuation, is useful against pains occasioned by motion, accompanied by coldness of the affected parts; the pains are seated more in the whole limb than in the joints, and more in the fleshy parts than in the bones, and are of a drawing, tearing, pressive or sticking character, with trembling of the parts affected, or pain as if from being beaten, and heaviness of the limbs.

In cases similar to the above, occasioned by taking cold, *Dulcamara* will likewise be useful.

Chamomilla, 3d, is most appropriate, when the pain is more in the tendons, ligaments, or bones and unattended by swelling; if it comes on most severely at night, or attacks the spinal column, beginning above and extending downwards, and when it extends from the small of the back to the thigh. If this remedy should not be sufficient, it may be alternated with *Pulsatilla*, especially when the pains are jerking and tearing, or drawing in the muscles, and are mitigated in the open air, and aggravated in a warm room or in bed.

Rhus toxicod. is most suitable in tensive, tearing and drawing pains, which make their appearance during rest, on rising from a sitting posture, and are worse in the open air, with a feeling of numbness and deadness in the affected parts, which are red and shining, and painful on being touched.

In the cases above mentioned, all outward applications, such as cotton, oiled silk, wool, flannel underclothes, &c., must be avoided, inasmuch as they only heighten the temperature of the affected parts, increase their susceptibility, induce sweating, and render them more susceptible to pain. The liability to more

frequent returns will also be increased, and the disease become more and more obstinate, and finally incurable.

It is much better unless there be considerable fever, or much weakness which compells the patient to keep his bed, for him to take considerable exercise in the open air, daily, even in winter. By this means the skin is brought into action, by the operation of its natural and healthy irritants, and kept in contact with habitual influences the long absence of which is unavoidably attended with great sensitiveness of the skin, and which operate under such circumstances as morbid influences.

The *Podagra*, or *Gout*, is indeed in close affinity to the pains above described, but is of a far more intense grade, and requires a greater distinctness and development as a disease. It is an inflammatory affection of the feet, especially the joints of the great toes attended with swelling, pains and inability to move the parts implicated. As a disease which may be very dangerous in its consequences, and requires a very prudent treatment, which cannot be entrusted to the laity, it does not properly belong here; nevertheless I have admitted it, because the layman, particularly in the country, seldom calls in the aid of a physician, but on the contrary much prefers to follow the advice of neighbours and friends, thereby often preparing for himself inexpressible sufferings. On this account I shall direct attention to some remedies for gouty patients which are seldom given without benefit, provided due attention be paid to the rules and directions of homœopathic diet.

Aconite, 12th attenuation, will be indicated in the beginning if there be considerable inflammation in the parts affected, or if there be a general febrile condition, as is almost always the case with irritable, full blooded sensitive persons. After giving one dose of this remedy, nothing else should be given for 10 or 12 hours, after which if there be some improvement, another dose may be given, but if on the contrary the symptoms be worse another medicine must be selected.

Arnica, 6th attenuation, is an excellent remedy to succeed *Aconite* in this form of disease, if the patient complains of a

numbness, and pain, as if the part were dislocated; or of pain and restlessness, as if he lay on too hard a bed which obliges him to be constantly moving the part affected. A few globules or a drop of the liquid on sugar or in a teaspoonful of water may be given at a dose.

Arnica is also beneficial when there are pricking, crawling, or paralytic pains with great heat and shining redness of the parts; the pains are aggravated by speaking, sneezing, moving and even from noise; or when this apparently local disease is brought on by taking cold after excesses in eating and drinking. Here also *Nux vomica* may be given with benefit, one to six globules of the 12th attenuation.

If none of these have a satisfactory effect, *Sulphur* in tincture may be administered with good results. It should be given several times at intervals of one or two days between the doses.

Goitre.

The term *goitre* is applied to a swelling and enlargement of the shield-like (thyroid) gland which is located in front and at the head of the windpipe. When this swelling becomes large it disfigures the throat very much, and by its pressure upon the windpipe restricts respiration, particularly when walking and going up stairs. Scrofula in early life frequently lays the foundation for this disease; difficult labors may also sometimes induce it in after-life. This complaint is most frequently met with in mountainous countries, and the female sex is more subject to it than the male.

The best remedy in these cases is *Spongia marina tosta*, in frequently repeated doses. A thorough cure is not, however, always effected, but still much is gained if the tumor can be lessened and its further growth checked. Indeed, in order to accomplish this, it is frequently necessary to use lower and lower attenuations, and even to recur to the pure tincture. My advice however is, to begin with the 6th attenuation.

Green Sickness. Chlorosis.

This malady is peculiar to the female sex, and occurs during the period of development from girlhood to womanhood, sometimes continuing months, or even years, and only disappearing by the regular establishment of menstruation. The chief symptoms are, a marked paleness, running into greenish yellow, and bloodless color of the skin, which becomes flabby, and feels cold; the patients are always chilly, the tongue is very pale, there is general weakness of the muscles, the patients are easily fatigued, hence are languid and constantly seek for rest, complain of difficult breathing, especially on going up stairs, palpitation of the heart; weak, small pulse; loss of appetite, oppression, belchings, flatulency after eating, frequent burning in the stomach, nausea, and sometimes vomiting, costiveness, sadness, and great inclination to sleep. The exciting causes are, unwholesome air, dampness, cold, indigestible food and stimulating drinks, especially strong teas, coffee and spiced drinks; inactivity or too great exertion, grief, solicitude, sorrow, and too early sexual instinct.

Its treatment must be commenced by adopting a natural system of diet; hence everything calculated to excite the procreative appetite is to be avoided, as, stimulating food and drinks, excitement of the imagination by lively impressions on the mind, reading loose romances, balls, plays, indolent habits, sleeping in soft beds, or sleeping too long. Likewise, regular activity of mind and body must not be neglected. If the disease be brought on by great hæmorrhage, by blood letting, excessive purging, sexual indulgence, or the vice of self-pollution, *China* should be given daily; this remedy is also suitable when there is swelling of the limbs, particularly the feet, blue circles round the eyes, distention of the abdomen, costiveness, acute pains, drawings and cramps in the bowels, indigestion, sour belchings, &c. If this remedy is not sufficient, and the patient be of a complaining, sorrowful disposition, with weak or protracted menstruation, paleness of the face, and laxity of muscular fibre, *Pulsatilla* should be given daily. In great excitement of the sexual functions, *Platina* is indicated, one dose daily. *Sulphur*, either in tincture,

or in attenuation, is one of the best remedies in this complaint, repeated every other day. *Ferrum metallicum* is likewise useful in many cases after or in alternation with *Sulphur*. According to my experience, however, *Sulphur* is the corresponding remedy to *Pulsatilla*, and may be given alternately with it, that is, one day *Sulphur*, and the next *Pulsatilla*.—In the well-defined and chronic cases of chlorosis, *Ferrum* is almost indispensable, especially when there is violent palpitation of the heart and strong, irregular pulse. In such cases it should be repeated morning and evening, and continued for a length of time. The advise of a homœopathic physician will be requisite in most cases of this disease.

Grippe.

This is an epidemic disease which generally attacks very suddenly, and presents the following symptoms: cough, and watery discharge from the nose, with drawing pains and stiffness of the neck and great debility; to these may be frequently added numerous other symptoms, such as pains of the throat, stitches in the sides, coughing up of blood, fever, headache, loss of appetite, diarrhœa, and other abdominal complaints. As the grippe is generally more violent in its attack than a catarrh fever, and is more apt to affect the chest, and lay the foundation for consumptive diseases, I would therefore warn the layman to obtain the advice of a physician while relief is yet possible, and not to trust the treatment too long to his own powers.

I shall hence only direct those medicines which have in general proved most serviceable at the beginning. Smelling *Camphor*, 3d, several times, is often very beneficial in checking the progress of the disease. When inflammation of the organs of the chest predominates, one or two doses of *Aconite* must always be first given at intervals of three hours; which may be followed by *Nux vomica*.—Mostly, however, *Mercurius solubilis*, particularly in severe affections of the head, throat and chest, with a dry, shaking cough which afterwards becomes loose, will relieve the disease in doses repeated daily, or twice a day. On the contrary when the windpipe is much irritated, and inflamed, so that

the severe pain will hardly allow the patient to speak, and his voice is much changed, *Phosphorus* is the best remedy. When the cough begins to get looser, and the expectoration becomes more copious, *Bryonia alba* is the most appropriate remedy, given once or twice a day. See also "Catarrh" and "Cough".

Grief and Sorrow.

Grief, when long indulged may make a deep impression on the mind, and give rise to as many morbid symptoms as anger and fright. Its effects bear a close resemblance to those arising from vexation, as manifested in persons who are not prone to break out into violence, or become enraged, but who conceal the cause within themselves, thus keeping up a constant remembrance of the occurrence. In cases of this kind, even when epilepsies of an intractible character occur, *Ignatia amara*, 12th, is the most suitable remedy, and if the disease is not entirely removed by one dose, it may be repeated daily, or every two or three days.

If grief and sorrow should occasion pressure at the stomach, with vomiting, or dizziness with headache, *Ignatia* will also be useful—more frequently, however, a dose of *Phosphoric acid* will be indicated.

Grief may also be brought on by *unhappy love*, and is then likewise removed by *Ignatia*, repeated a few times; occasionally, if accompanied by fever, it may be necessary to alternate *Ignatia* with *Phosphoric acid*.—If *jealousy* be the exciting cause, and especially when the patient is disposed to be violent, *Hyoscyamus* is most appropriate, repeated once or twice a day.

If *homesickness* give rise to unpleasant symptoms, and the patient is unable to sleep, and has heat and redness of the cheeks, *Capsicum*, 9th, is the most suitable remedy; for which *Phosphoric acid* may be substituted when hectic fever, morning sweats, great drowsiness, apathy and dullness take place.

Staphysagria is generally most serviceable against the protracted effects of grief and sorrow, such as fretfulness, moroseness, restlessness, fear, melancholy, timid apprehension of the

future, drowsiness by day, want of sleep by night, debilitating sweats, falling off of the hair, languid speech, &c. *Phosphoric acid*, when the patient from mere vexation will not speak, and becomes thin and feverish. *Mercurius vivus*, if he is more quarrelsome, perverse and irritable, and has frequent attacks of anxiety.

Greediness. Bulimy.

Greediness or bulimy consists in a violent, irresistible longing after food, which, if not speedily gratified, brings on sudden debility and even fainting. The most common cause is a morbid irritability of the nerves of the stomach (a number of other causes may, however, give rise to it, which are also more apparent as they are accompanied by other symptoms), and is frequently a forerunner of cramp of the stomach, with heartburn, nausea, vomiting, and costiveness. *Nux vomica* or *Veratrum*, in the higher attenuations, are the best remedies.

H.

HÆMORRHOIDS.

See Anus, itching of the.

Headache. Cephalalgia.

1. *From congestion of blood to the head.*

Aconite, 6th attenuation, is most suitable against headache from congestion, presenting the following symptoms: confusion of the head with vertigo, sensation of crawling in the forehead, burning in the head, with coldness of the remainder of the body; pressure and throbbing, relieved on lying down, increased on rising; cheeks puffed up and red; great irritability of the nervous system; great fretfulness; disinclination for business, and sleepiness.

Belladonna, 18th attenuation, when there are pressive and distracting pains, as if the head would burst, or as if every thing were coming out at the forehead or one side; great soreness of

the scalp, and even of the hair; distended veins of the forehead and hands; ringing in the ears; darkness before the eyes, hypochondriac disposition, absence of thirst; or, when there are one-sided, tearing, pungent pains every day, from about four o'clock in the afternoon till the following morning, which are aggravated by motion, especially of the eyes, by going up stairs, by the touch, in the open air, or by a current of air, or at night when warm in bed.

Pulsatilla, 12th attenuation, if there be giddiness as if from intoxication; paleness of the face, anxiety; disposition to shed tears; palpitation of the heart; bleeding at the nose; sensibility of the eyes to light; want of appetite: the symptoms affect but one side of the head, are worse when sitting, and better when moving about; also tearing pains which are worse toward evening, or when the headache is alleviated by pressing or squeezing the head, or bandaging it tightly.

2. *From dissipation, wine-drinking, loss of sleep.*

Nux vomica, against heaviness in the head, as if drunk, gloominess; buzzing in the forehead, with sunken and pale countenance; sensation of weight in the forehead, so that the patient can hardly hold up his head; inclination to vomit; weakness in all the joints; chilliness; fretfulness; pain as if a nail were driven into the head, with stitches and pressure on one side of the head; the pains are worse towards morning even so violent as to cause temporary loss of memory; daily headache early in the morning on waking, after eating, in the open air, on stooping, and after the use of coffee. In regard to *Nux vomica*, it may be observed that in cases of no great severity, it should be taken in the evening, one or two hours before going to bed.

3. *From constipation.*

Nux vomica, against obscure pain in the forehead and back part of the head; sensitiveness of the brain, particularly in walking and bending the head; pressure in the temples, relieved neither by a recumbent nor erect position; dulness of the eyes; drooping of the eyelids; want of memory, and sleeplessness.

Bryonia, 12th attenuation, if the constipation occasions a rush of blood to the head; dizziness; pressing together of the temples; sensation as if the head were confined and too heavy; the pain is so severe on stooping that it seems as if every thing were falling out at the forehead—attended also with bleeding at the nose, and frequent chilliness; the pains are mostly aggravated by motion, walking and touch; this remedy is best adapted to persons of a quarrelsome, scolding disposition.

Opium, 6th attenuation, against headache from constipation with determination of blood to the head; great thirst with dryness of the mouth; sour belching and inclination to vomit; vomiting of very offensive substances; tearing and jerking pains; outward pressure in the forehead; twitchings about the temples. Only when there is obstinate constipation, with the most violent congestion of blood to the head, and unsteady vision, is *Opium* indicated. In such case the advice of a physician is essential. In some cases *Ipecacuanha* may also be suitable, especially when there is much nausea and vomiting.

Pulsatilla, 12th attenuation, is particularly serviceable in females, and when the pains are chiefly confined to one side of the head, with chilliness; absence of thirst; ill humor; disposition to shed tears, and anxiety. It is best suited to persons of very quiet, mild dispositions.

4. *From irritability of the nervous system,—hypochondriasis, &c.*

Moschus, 3d attenuation, when there is obscure pressure over the root of the nose; dizziness from the least motion of the head; confused feeling in the head as if the senses would be lost; painfulness of the whole head, with crawling and constriction in the back of the neck; congestion of blood to the head; drowsiness, anxiety, and fretfulness. As the *Moschus* acts only for a short time it does not always afford entire relief, and therefore *Nux vomica*, 12th attenuation, may afterwards be given with advantage.

5. *From suppressed perspiration.*

Chamomilla, against headache from suppressed perspiration with tearing pains in the head and stitches in the temples; feeling of weight over the root of the nose, as if catarrh were coming on; dulness in the forehead; bloated appearance of the face and eyes, and dimness of vision.

When *Chamomilla* is insufficient, *Sulphur* may often be given with advantage.

HEARTBURN.

See Stomach, cramps of.

Heart, Palpitation of the.

This is a throbbing motion located above the diaphragm (the muscular partition between the organs of the chest and those of the abdomen), which is particularly evident to the patient, and is often very troublesome, even painful, and causes great anxiety. It is generally excited and aggravated by certain positions, both recumbent and erect, and by others is relieved or removed. In but few cases do we find the palpitation so isolated that no other spasmodic affections are connected with it. Nevertheless there are some cases, and these are generally where there is great plethora or fulness of blood, and in a close built, vigorous state of body. In these cases by avoiding all spirituous and stimulating drinks, a few doses of *Aconite* (two daily), and when this does not answer, a dose of *Nux vomica*, 12th, after a few days, the latter taken only in the evening, will mostly effect a cure.—If the palpitation is caused by violent anger, after a dose or two of *Aconite*, *Chamomilla* is the proper remedy. If it depend on excessive and sudden joy, *Coffea* is the remedy indicated. If fright be the cause, it will be relieved by *Opium*.—If the free use of coffee or other stimulating or spirituous drinks has occasioned determination of blood to the chest, with palpitation of the heart, *Nux vomica* will generally be most appropriate, provided the patient avoids such diet as will be disadvantageous and hurtful.—In very sensitive weakly females, who have yielding

dispositions, this morbid condition, if none of the exciting causes above mentioned exist, may mostly be relieved by *Pulsatilla*, 12th attenuation.

Hiccup.

This is a common and mostly unimportant affection; it is frequently occasioned in infants by slight exposure, changes of temperature, &c., and may generally be left altogether to nature, for as the child acquires strength of body, it becomes less and less frequent, and finally ceases. Some young mothers however, especially with the first child, become alarmed if it take place often, or continue for any length of time, and are anxious to have it removed.—The best remedy is, to give the child the breast, or a few teaspoonsful of sweetened water. If this should fail, one or two globules of *Nux vomica*, put upon the tongue, will generally afford relief.

HOARSENESS.

See Catarrh.

HOMESICKNESS.

See Grief.

Hooping Cough.

This disease attacks a subject seldom or never twice. For the most part, children only are visited by it, seldom grown persons. It commonly begins with a catarrh (snuffling and cough) which continues several days or weeks; the cough being clear, sharp, and high toned. This is followed by the spasmodic cough, the onset of which is announced by inward uneasiness, anxious moving about, or taking hold of something, or by sneezing, yawning, tickling or pressure in the windpipe, and other precursory symptoms. The cough consists of several short, quick expirations, by jerks, with shaking, without being able to inspire perfectly, followed suddenly by a long drawn, deep, braying, whistling, or shrieking, ringing inspiration, and then again the expiration: this is repeated several times successively, and continues one or more minutes. The longer the attack continues,

the greater is the sense of suffocation; the child bends the head forwards, sets the hands and head against something, or becomes almost exhausted, with reddish blue or brown face; at times blood issues from the mouth and nose. The attack commonly ends by hawking and expectoration of mucus, or by ejection of the contents of the stomach; at times with sneezing, when the suffocation subsides, and the child is again sprightly.

In the first stage of the disease, that of the catarrh, the medicines recommended under "Catarrh", "Influenza", and "Grippe", will be appropriate, and will often greatly modify it, or prevent it entirely. But if it has already passed to the genuine hooping cough, "then" (says *Hahnemann*) "give a single dose (one to three globules) of a high attenuation of *Drosera rotundifolia*, for the homœopathic and complete cure of this epidemic cough, which it will generally accomplish within seven or eight days, by proper attention to diet. But if one dose is not sufficient to complete the cure, a second dose of the same remedy, after seven or nine days, will do it." According to later experience, however, the appropriate remedy for a disease must be frequently repeated, and therefore here a fresh dose of *Drosera* ought to be given every two or three days.—*China*, in the 6th attenuation, is especially suitable, when the cough commences with a sudden, cramplike constriction of the glottis and general rigidity of the body.—*Belladonna* is indicated when there is spasmodic, dry cough, and may be alternated with the foregoing medicine with advantage.—In the more violent grades of the complaint, no remedy surpasses the *Cuprum metallicum*, especially when the breath during the cough is entirely suspended, the patient becomes rigid, and on the return of vital action and process of breathing, vomits, and then breathes very slowly. This remedy is also suitable when the breathing is attended with a rattling in the windpipe, as if it were full of mucus.—In attacks of hooping cough, coming on or worse at night, *Conium maculatum* is one of the most valuable remedies, in a high attenuation.—The catarrhal cough which often remains a long time after the disease has been removed, is in many cases relieved by *Ipeca-*

cuanha, repeated several times a day.—Should these remedies, however, be inefficient, the disease is in all probability connected with some other morbid condition, the discovery of which should only be entrusted to an experienced physician, who will easily find the most appropriate remedy.

Hydrophobia.

As seldom as this disease occurs, it is nevertheless one which, on account of the rapidity of its course requires the most prompt assistance in order to afford any prospect of recovery. For this reason, I consider it a duty to describe the disease as accurately as possible, in order to give the layman a distinct image, so that he may be on his guard against the danger in which not only the patient, but also those around him are placed, since the bite of one suffering from this malady is as fatal as that of the animal that bit him.

The disease sometimes comes on in a few days, at others not for a long time after the infection. The wound frequently heals up quickly after having suppurated but slightly. If the disease is about to appear, there is general restlessness and anxiety, disturbed sleep, frightful dreams, and increased irritability of the organs of sense. The eyes are bright and shining, reddened, and very sensitive to light; the patient seeks darkness, and suffers from tingling in the ears, and giddiness; his countenance is pale, the breathing is oppressed, the appetite fails, and at times there is a cramplike, bilious vomiting.—The wound which had previously healed, now reddens again, soon becomes bluish, hot, itches, is painful, opens afresh, and discharging a fetid, discolored, blackish ichor, and forms an ulcer with raised and spongy edges; the surrounding parts also become swollen and painful. From this ulcer, drawing or pricking pains often extend over the whole limb. The anxiety and restlessness of the patient increases; he complains of deafness, dizziness, humming in the ears, sparks before the eyes, nausea, and drawing pains in the back of the neck; he is fearful, sad, quiet and seeks solitude; respiration is impeded; he complains of coldness over the whole body, but

especially of the limbs. As the disease advances, hiccup, colicy pains, wild staring look, and palpitation of the heart set in, with spasms of the throat, which are aggravated by drinking, and at times all efforts to drink are fruitless; at the same time convulsions attack the muscles of the neck and face. The patient, however can still swallow solid food. The higher the disease rises, the more impossible it becomes for the patient to drink, and every attempt thereto excites the most violent spasms in the throat, with symptoms of suffocation and spasms of the whole body; the very sight of water, the noise of water falling, the sight of shining objects, such as mirrors, glass, &c., even the mere mention of water excites the most frightful spasms, amounting even to fury and madness. The patient cannot even swallow his own saliva, hence he constantly spits about him, and suffers from greater dryness of the mouth and fauces, and intense thirst, without the possibility of quenching it. To this succeeds the most violent paroxysms of true madness, which return periodically, generally continuing from a quarter to half an hour, and becoming more and more frequent and violent.

This is the deplorable picture of a disease, which may be brought on merely by the bite of a mad dog. According to the old-school practice, the wound is cauterized, burnt, cut out, covered with Spanish flies, and internally mercury, belladonna, cantharides, &c., are given in excessive doses, with the view of preventing the outbreak of the disease, but always with but little or no good results. It was reserved for the far-seeing *Hahnemann*, who penetrated more deeply into the mysteries of nature than any physician before him, to make known to his colleagues and to the world, the specific preventive and remedy against this frightful disease, which he does in the following words: "The most certain preventive of hydrophobia is a small dose of *Belladonna*, given every three or four days; one or two doses of which will generally effect a cure." By this he means, two or three globules, moistened with a high attenuation of *Belladonna*.—In cases where according to the usual treatment large doses of *Belladonna* have previously been given as a

preventive, and the disease notwithstanding makes its appearance, this remedy is no longer appropriate, but generally *Hyosciamus* or *Stramonium* are more suitable.

In this disease, however, the aid of a physician is indispensable, and the friends of the patient will do well to send for one as speedily as possible.

HUNGER, INORDINATE.

See Greediness.

Hæmorrhage.

Hæmorrhages of all kinds are so dangerous, and even after the discharges of blood has ceased, the results are so critical that in general I could by no means advise the laity to undertake the sole management of it; I propose, however, as the danger is mostly pressing, and in the country a physician is not easily procured, to notice a few of the remedies which will be most serviceable. In these cases a physician's advice must be had as soon as possible, for there is not only danger of a return of the hæmorrhage, but often consumption, asthma, and similar affections are brought on, if it be not very carefully treated.

The symptoms accompanying hæmorrhage, are so numerous, that they cannot be all given within these limits; but I shall endeavor to present a number of the most common, which will serve as a guide to those unacquainted with medicine.

1. In general the premonitory symptoms of hæmorrhage, which are among the most frequent, are :

A feeling of irritation about the upper part of the chest; short, dry cough; shortness of breath, especially on going up stairs; a feeling when moving as if sufficient breath could not be taken into the lungs; tightness under the breast bone, with more or less palpitation of the heart; inclination to take a deep breath; pressive pain in the side towards the breast bone which goes through to the back and is felt when at rest, but becomes more severe on moving about; stiches in the chest; feeling of constriction in the chest; pressure and tightness under the ribs,

with great fear that life is in danger, especially on moving and speaking.

After these symptoms have continued for some time, the irritation and cough increase, the latter becomes dry and hoarse, and frequently gives rise to pain, and is attended also with a taste of blood in the mouth; then take place also shivering with alternating flushes of heat; general debility; disposition to lie down; trembling of the limbs, copious sweats; dimness of the eyes, and vertigo.

Finally the patient begins to cough up blood, which continues to increase, till at last large quantities are brought up.

In cases of this kind the patient should have, in an interval of rest, when the expectoration of blood has somewhat abated, a few globules of *China*. There is no imminent danger to be apprehended from the expected crisis of the disease, which manifests itself by an increased discharge of blood, for it does not continue long, and if the hœmorrhage were checked at once, a part of the separated blood would coagulate in the cells of the lungs, and bring on serious and dangerous subsequent complaints.

In cases when, with symptoms similar to the above, the hæmorrhage is also preceded and accompanied by a sensation of agitation or ebullition in the chest, and the blood is discharged by merely hawking, or with but slight efforts at coughing, attended likewise with a feeling of fulness and burning in the chest; palpitation of the heart; anxiety and restlessness, the latter worse on lying down; weak, almost imperceptible pulse; anxious expression and paleness of the face, and the blood is thrown out by starts and in large quantities,—there is, according to my experience, no remedy more beneficial, at least for the moment, than *Aconite*, 6th attenuation, which may be administered by giving a few pellets, or a drop of the liquid on sugar; or, still better, by mixing a few drops with half a tumbler of water, and give the patient a teaspoonful of the solution every hour. This mode of application is most suitable in acute cases, in which the doses are to be repeated frequently when the disease is violent, gradually lengthening the intervals as it becomes

milder.—When the attacks of acute hæmorrhage are no longer renewed, but the attending symptoms are not yet removed, and particularly if there is reason to fear a return from the continuance of the irritating cough, and should the taste of blood, or expectoration of mucus streaked with blood be still present; *Ipecacuanha* should be given, and may be repeated every one and a half or two hours, until every trace is obliterated. If a fresh attack occur, let *Aconite* be alternated with *Ipecacuanha;* and after the disease is fully overcome, and debility only remains, give a dose or two of *China.*

Pulsatilla, 12th attenuation, will be preferable if the patient be worse at night, and complains of chills and general debility; tenderness and pain in the lower part of the chest, with a depressed state of mind, inclined to weeping.

All external remedies, especially the application of cold poultices to the chest must be entirely avoided, for though the cold may temporarily check the flow of blood, and apparently have a good effect on the vessels that separate it; yet this is soon over, and the temporary improvement will probably be followed by a recurrence of the hæmorrhage, much more severe than at first.

2. Among the most serious and most violent hæmorrhages are those which take place from the womb during gestation (*Uterine hæmorrhage*). The common treatment with cold applications, cold injections of vinegar, rubbing with naphtha, are usually of no benefit, but often on the contrary, excite pains cramps, &c., and by this mechanical irritation increase the flow of blood.

In very many cases of this kind, midwives unconsciously make use of a homœopathic remedy—*Tincture of Cinnamon*—which is often productive of much benefit; and this appears particularly to have been the case, when the flow of blood has been occasioned by a misstep, a concussion from carrying too heavy a load, by overreaching and similar causes. It should not be given, however, in teaspoonsful as is mostly done, least it bring on an aggravation of the disease, and be rather injurious than

beneficial. One drop of the tincture such as is prepared by every apothecary, would be more effectual. In some cases *Arnica* is also useful.

Besides these the following may be recommended, their efficacy having been established by experience.

When the hæmorrhage is continuous, and large quantities of blood of a bright red color are discharged, attended with cuttings in the abdomen, general debility and inclination to lie down, let a drop of the 3d dilution of *Ipecacuanha* be given. In very many cases of this kind, this remedy is preferable to all others, but it requires to be repeated at intervals of a quarter to half an hour.

When the hæmorrhage is accompanied by pains resembling those of labor, *Chamomilla* in the 3d dilution is of service; and also when brought on by violent anger.

If the discharge of blood is dark colored, in clots, and attended with cutting pains deep in the abdomen, drawing toward the back, *Crocus* in the 3d dilution is the most suitable remedy. When the discharge is of a bright red color, and attended with pains like those of labor, *Juniperus sabina*, in the 6th dilution may be preferred.

But, on the contrary, if the uterine hæmorrhage be attended with cramps, so called, and bearing-down pains in the lower part of the abdomen and towards the rectum; if the discharge take place in jets with each pain, and is also accompanied by cutting pains in the bowels and tension of the abdomen, with much weakness, disposition to faint, and even fainting, coldness of the body and limbs; frequent desire to make water, from sympathy of the bladder with the adjacent womb, heaviness in the head, vertigo, confusion of thoughts, drowsiness; then let the patient take *China*, repeated every hour.

If, after this medicine has acted a sufficient length of time, the flooding is renewed, or if it originate with the following symptoms:

Laborlike pains as in delivery, with drawing in the loins and small of the back; trembling of the whole body; confusion and

dulness of intellect; incoherent talking and delirium; great restlessness; excessive activity and startings up; twiching of the tendons, and convulsive motions of the limbs; numbness of the limbs, commonly said to be asleep; drawing pains in the limbs; faintness, general heat; swollen veins; more rapid circulation of the blood, with strong, frequent pulse; indistinct, dull features; let the patient take a dose of *Hyoscyamus*, 6th dilution.

At the same time the patient must be kept strictly quiet physically and mentally, must be laid on a convenient couch, not too warm, avoiding every unnecessary movement of the body, and excitement of every description. Her attendants must keep themselves quiet, she must not distress herself too much about her disease, and not be annoyed by strong odors nor too much light; as in a highly excited condition of the nervous system, even ordinary impressions may operate as morbific irritants of the organism, and bring on an injurious loss of blood.

If a copious flow of blood take place in a female, not pregnant, during menstruation, or at any other time from any cause, for inst. anger; a fall, or concussion from other cause; heavy lifting; overreaching, &c., the same remedies that are here mentioned will be of service, given in doses proportioned to circumstances.

I.

Inflammation.

This condition is mostly characterized by increased circulation, by redness and heat of the inflamed organ, by swelling and hardness, and by the accompanying pain, which may be itching, pressing, constrictive, or pungent. The most common causes of inflammation are, mechanical injuries, such as cuts, sword-thrusts, punctures, and gunshot wounds, and splinters of bone; chemical irritants, such as acids, acrid vegetable substances, oils, and animal poisons; and likewise cold, dry North and East winds; mental emotions, such as anger, vexation fright, sudden joy, and finally all kinds of bodily diseases.

In the first class of inflammations, that caused by mechanical injuries, any foreign substance remaining in the wound must be carefully removed, and the part washed with a lotion of *Arnica tincture* (ten drops to half a teacupful of water) which remedy should also be given internally in the 3d or 4th attenuation two or three times a day to lessen the fever arising from the wound. If acids, such as sulphuric, muriatic, nitric, phosphoric, &c., occasion the inflammation, large quantities of warm milk, emulsions of sweet almonds, or warm soap suds should be given; a teaspoonful of magnesia in a teacupful of water, taken after every fit of vomiting, will also be beneficial.

The chief remedy in inflammations of the internal organs which are brought on by other causes, is *Aconite*, repeated every three or four hours, especially when there is a hot, dry skin and hard and accelerated pulse. When there is profuse night sweats, and general debility, *Mercurius solubilis* is most beneficial. *Belladonna* and *Bryonia* are likewise occasionally found to be serviceable. See also the individual varieties of inflammation described in this work.

INTERMITTENT FEVER.

See Fever, intermittent.

INFLUENZA.

See Grippe and Catarrh.

Itch. Psora.

This peculiar and well known eruption, which appears in the form of small pustules, often deeply seated in the skin (the so-called greasy itch consists of vesicles containing pus), generally shows itself first about the joints between the fingers, whence it spreads over the whole body with the exception of the face. It gives rise to a voluptuous and rather agreeable itching by exposure to external warmth, that of the bed for instance, which after scratching changes to a burning sensation. Itch, when of long standing and treated by ointments, changes its character, and becomes scabby or tettery, and appears, particularly about the

joints, in the form of large moist spots full of chaps which bleed easily on being rubbed.

The best remedy against this complaint is *Tinctura Sulphuris*, a drop morning and evening in a tablespoonful of water. After continuing this remedy for six or eight days it may be discontinued for a few days, and then resumed again, taking however, but one dose daily; as the disease yields, the remedy should be given at longer and longer intervals, until a thorough cure is effected. A confirmed case of itch, or one which has been badly treated, will not often be removed by this remedy alone, but will require the alternate administration of *Carbo vegetabilis*, 18th attenuation, or perhaps also a few doses of *Psoricum*, 18th attenuation.

In the dry, measly form of itch, the treatment should begin at once with *Mercurius solubilis* and *Sulphur* in alternation every other day. If pustules arise in the course of the treatment, or if the itch is from the first moist and pustulous, *Lycopodium*, 18th attenuation, will be indicated, a dose every two or three days; followed, if necessary, in about two weeks by *Causticum*.

J.

Jaundice. Icterus.

As this disease may originate from a variety of causes, and the treatment must be regulated accordingly, which the layman will not often be able to do; I shall therefore give here but a few directions. Jaundice is characterized by yellowness of the skin, which affects the whole body; generally to be observed first in the whites of the eyes, the wings of the nose, and corners of the mouth. The urine also is of a yellowish red color, depositing a reddish sediment, and stains paper, linen, &c., yellow; the stools are white, gray, or clayey.

If these symptoms occur without fever after violent anger, *Chamomilla*, 3d attenuation, will be the most suitable remedy,

and will check the disease in its formation, and restores the incipient morbid changes to their healthy condition. But where the system is already in such a morbid condition that the merest trifle may excite the most violent passion, from which then likewise the previous sufferings may proceed, we may look for some other exciting cause, which will frequently be found to be an erroneous diet. The jaundice of children is often occasioned by the abuse of laxative medicines, in which rhubarb is commonly an ingredient, which ignorance and prejudice too commonly deem necessary for new-born children, in order to promote the discharge of the meconium. But even in later years, by the plentiful use of chamomile-tea, we often see an irritable, fretful state of mind induced, which may readily act as an exciting cause of jaundice. In such cases *Chamomilla* will do no good; but much benefit will be derived from the use of *Ignatia amara* and *Pulsatilla*, given in the attenuations already specified. If these remedies, however, should be insufficient for the entire removal of the disease, *China*, 6th attenuation, will generally be successful.

Mercurius solubilis, 6th attenuation, is one of the most important remedies in this disease, and will especially in cases of obscure origin in scrofulous subjects, where the disease is frequently induced by a slight exciting cause effect a speedy cure. It may be repeated two or three times a day. *Sulphur* is likewise useful in some cases; it follows *Mercurius solubilis* with advantage, especially if the latter has produced a favorable change, but has not entirely removed the complaint.

China will be useful in cases arising from abuse of mercury, also in cases arising from other causes which the above remedies have been insufficient to cure; it may often be alternated advantageously with *Mercurius solubilis*.

Bryonia or *Nux vomica* will be found useful in cases attended by costiveness with much sensitiveness from pressure on the right side under the ribs, in the region of the liver, also when there is pain in this part on motion.

K.

Kidney, inflammation of the. Nephritis.

This affection is generally known by the following symptoms: a dull heavy pain or weight is experieneed on one side in the region of the loins—when one kidney only is implieated. This is followed sooner or later by an aeute pungent or laneinating and deep-seated pain, whieh is aeeompanied by a sensation of internal heat. The pain frequently extends from the loins along the ureters to the bladder and testiele of the affected side, and often to the groin and thigh, where it gives rise to a numbness or peculiar tremulous motion. The testiele is also usually retraeted. The pain is aggravated by respiration, by making a quiek or false step, or by any kind of shoek, and by pressure. In most cases the urine is seanty and high colored during the first few days; sometimes bloody; and it may be altogether suppressed when both kidneys are affected. In other eases, however, it is clear, watery, and deposits a whitish sediment. The pain is at times intermitting or remitting in its eharaeter; when this is the case, and small grains of sand or gravel are found in the urine, the disease is probably eaused by a ealculus in the kidney.

These symptoms are aeeompanied by more or less fever, and generally also by nausea and vomiting, and often by an uneasy sensation in the abdomen with flatulence, and frequently by diarrhœa.

Nephritis commonly ends by resolution; oeeasionally, however, it ends in suppuration. When this is the ease, the pain beeomes dull and heavy; the pulse soft and full; there is alternate ehilliness and fever, followed by sweats; and when, in addition to these symptoms, pus is observed in the urine, there is no doubt of the existenee of suppuration.

The most frequent *causes* of nephritis are: blows on the lumbar region; violent exereise, as daneing, riding on horsebaek or in a rough carriage without springs; the use of drugs whieh aet as irritants to the kidney, sueh as eantharides, oil of savin, oil of turpentine, &c.; the presenee of ealculi in the kidney, espe-

cially such as are pointed; and it is not unusual to meet with it either preceding or following an attack of rheumatism or gout. The inflammation may also extend to the kidneys from the bladder or urethra.

Treatment.—Aconite, Cantharides, Cannabis, Nux vomica, Pulsatilla, Arnica, Hepar sulphuris, Mercurius vivus, and *Sulphur,* are the chief remedies in this disease.

Aconite is indicated in the commencement of this affection to combat the inflammatory symptoms. It may be given every one to three hours, according to the violence of the symptoms, and continued until the fever is abated.

Cantharides will most generally be the preferable remedy after *Aconite,* and especially when the following symptoms are present: difficult and very painful urination, sometimes mixed with blood; burning pain in the urethra; the urine passes in drops; inability to pass the urine; pains of a shooting, cutting or tearing character in the loins and regions of the kidney. It may be repeated every one, two or three hours until relief is obtained, or one of the following remedies appear to be more suitable.

Cannabis, when cantharides has been insufficient, and the pain is more of a dragging nature, or when it shoots along the ureters,—from the region of the kidney down toward the groin.

Nux vomica will be valuable when the disease occurs in persons of plethoric habit, who are addicted to too great indulgence in wine and other stimulants; also in persons of sedentary habits, especially if it arise from suppressed hæmorrhoids, and there is constipation, nausea or vomiting, sense of faintness, distention of the abdomen, &c.

Pulsatilla, in persons of a mild disposition, and especially in females, when the nephritis arises from irregularity, or suppression of the menstrual function.

Belladonna may be given when the pains extend from the kidney to the bladder, and are of a shooting character; and when the urine is scanty, of a bright red or yellowish color, and deposits a red or whitish thick sediment, accompanied by

heat and swelling in the region of the kidney, and sometimes by colic; also anxiety, restlessness, and periodical aggravation.

Arnica, in all cases of nephritis arising from blows, violent concussion of the body, or any kind of external violence. It may be taken internally in pellets, and also applied externally in the form of a lotion.

Hepar sulphuris and *Mercurius vivus* are chiefly serviceable in cases where the disease has gone on to suppuration, or to the formation of an abscess, which may generally be known by the following symptoms: alleviation or cessation of the pain; a sensation of throbbing in the region of the kidney; a feeling of weight in the loins; alternate chilliness and heat, followed by profuse sweats. The *Hepar* should be administered by dissolving a grain of the third trituration in a tumbler $\frac{1}{3}$ full of water, and giving a teaspoonful of the solution every three or four hours. Unless *Hepar* speedily produce a decided improvement, it may be followed by *Mercurius vivus*, administered in the same manner, except that the globules, instead of the trituration, are to be used. These two remedies may be, in some cases, taken alternately with advantage.

Sulphur will be useful in protracted cases of acute nephritis, in which the remedies given have produced but partial relief, and also in the chronic forms of the disease—when the symptoms are less violent in their character.

Nephritis arising from abuse of cantharides in blistering, will be relieved by the use of camphor. A drop or two of the tincture on a lump of sugar may be taken three or four times a day.

L.

LABOR.

See Accouchment.

Lameness, spontaneous.

I have mostly observed this ailment to attack children suddenly and without any pain, and when called in time, I have always succeeded in removing it by the use of the two following

remedies. There is here no trace of fracture, dislocation or suppuration, but the child begins all at once to go lame, and grows worse from hour to hour; but still complains of no pain, but only pulls the leg along, and the affection seems to depend merely on a weakness in the parts surrounding the head of the thigh bone. A dose of *Mercurius solubilis*, 6th, and if this do not answer after two days, a dose of *Belladonna* commonly remedies the evil. But if these should fail, let there be no delay in obtaining the advice of an experienced physician, since the disease may otherwise become fixed, and then be very difficult to cure, for the cause in such cases lies deeper, and the physician alone by carefully arranging and comparing all the other relative circumstances in the case, is able to fathom it. Very often spontaneous lameness arises from inflammation of the thigh joint, which the layman is not able to recognize, and therefore it is generally best to consult the physician in the beginning, before any remedy is given by one unacquainted with medicine.

Leucorrhœa. Whites.

This term is applied to a discharge of mucus, generally whitish, proceeding from the vagina. It is of so common occurrence that almost all women, and not unfrequently small children, are subject to it. At first the patient notices a slight discharge of whitish matter, which escapes from the vagina, drop by drop, and is unaccompanied by any unpleasant sensation. If neglected, as is most generally the case in the beginning, the discharge increases in quantity, and in some cases it becomes excessive.

The quality, too, is changed, and it becomes greenish, yellowish, or of a dark-brown, almost black color, and gives rise to pains, excoriation, and ulcers of the parts. The general health also suffers; the appetite fails; the pulse becomes weak; the face pale and bloated; the eyes become dull and heavy, and are surrounded by yellowish circles; vision is impaired; there is constant pain in the back and loins; lowness of spirits; excessive debility, &c.

The exciting *causes* of leucorrhœa are numerous; anything which affects the general health may produce it; sometimes it is owing to the presence of foreign bodies in the vagina; some of the worse cases of the disease, for instance, owe their origin to the long continued use of an instrument intended to remedy falling of the womb. Such cases can never be cured until the exciting cause be removed. The disease is sometimes in women, and mostly in children, caused by inattention to cleanliness.

In the *treatment* of this affection much benefit will be derived from syringing the parts frequently with cold water. The medicines employed with most advantage are: *Calcarea carbonica*, *Pulsatilla*, *Sepia*, *Sulphur*, *Natrum muriaticum*, *Cocculus*, and *Causticum*.

Calcarea carbonica is particularly suited to females of a lymphatic constitution, light complexion, and who have copious menstruation which is liable to return too soon; when the discharge is milky, often passes with the urine, and on lifting, and usually comes on, or is worse immediately before menstruation; is often attended by itching and burning; shooting pains through the parts, and falling of the womb. It is also valuable in corrosive leucorrhœas of young children.

Pulsatilla, when the discharge chiefly takes place immediately before, during, and after menstruation; when produced by fright, and when occurring in young girls who have not menstruated; the discharge thick like cream, sometimes corrosive and attended by itching of the parts.

Sepia, against yellow, greenish, or fetid discharge, which sometimes produces excoriations; with bearing-down pains; frequent desire to pass urine; swelling of the abdomen; yellowish complexion.

Cocculus, if the discharge be mixed with blood during pregnancy, or like washing of meat, attended by colic and flatulency, and taking place principally before and after menstruation.

Causticum, against profuse leucorrhœa, having the smell of the menses, or which flows at night, attended by pain in the

back and loins; sallow complexion and excoriation of the parts.

Natrum muriaticum, when the discharge is copious, and consists of transparent, whitish and thick mucus, or is acrid, with yellow color of the face; also when accompanied by headache, disposition to diarrhœa with slimy evacuations and colic.

Sulphur, for inveterate cases of leucorrhœa; the discharge sometimes yellowish, burning and corrosive, and preceded by colic; also when it results from repelled eruptions or ulcers.

Lightning, Stroke of.

Those who are struck by lightning, if not instantly killed, are stunned, or apparently dead, with weak or quite imperceptible pulsations and respiration; the face is red, or blue; the eyes motionless, and often suffused with blood; at times blood issues from the mouth, nose, and ears; or the patient is pale, the limbs are relaxed, or spasmodically contracted.

Resuscitation must be attempted as speedily as possible. The best means of all is electricity, but as this is seldom at command, the next best remedy is the earth bath. For this purpose, let a hole be dug in the earth, about two feet deep, into which the patient, being first undressed, is to be placed in a sitting posture and surrounded with earth.

Should one not be in a situation to carry this method into effect, let cold water be dashed upon the patient plentifully, and rub the soles of the feet, the palms of the hands, and inside of the arms and legs, with a stiff-brush; at the same time let spirits of sal ammoniac (hartshorne) be occasionally held to the nose, and rub the pit of the stomach with vinegar or acetated naphtha; inflation of the lungs and injections of cold water with salt or vinegar will also be of service.

Liver, Inflammation of the.

The morbid symptoms by which this disease is mostly known, are: sticking, burning, cutting, constrictive, at times violent, more frequently however dull, pressive pains, seated in the right

side, close under the ribs, and extending to the pit of the stomach; it is generally aggravated by taking a full breath, coughing, lying on the left side, or on being touched. The parts are externally tender, swollen, tense, and sometimes reddened; there is usually connected with these a numb pain in the back extending to the right shoulder and arm. The respiration is labored, anxious, interrupted, or sighing, with a dry, deep and hollow cough, which, together with the pain and anxiety, is increased by lying on the left side; on which account the patient is obliged to lie on his back, or sit erect. Violent fever, hiccup, nausea and vomiting which does not afford relief; fulness, burning and oppression in the pit of the stomach, bitter taste, yellow coated tongue, more or less yellowness of the skin, costiveness, or hard, gray, and clayey stools are likewise common concomitants. This affection is easily induced in choleric temperaments, especially those who have previously suffered from derangement of the liver; it is also excited by exposure of the abdomen to cold during the heat of summer, by violent emotions of the mind, vexation, anger, and likewise by external violence in the region of the liver.

According to my experience, *Aconite* is one of the best remedies at the beginning of the disease, and it must be repeated every three hours, until the febrile symptoms have abated. The symptoms especially indicating its employment are: severe stitches about the liver, insufferable pain with sighing; restlessness and tossing to and fro, anxiety and dread of death.

Chamomilla may be advantageously used after *Aconite*, especially when the complaint has been brought on by anger, and there are dull, oppressive pains under the ribs, which is aggravated either by external pressure, motion, or breathing; obstructed respiration, and yellowish skin.

Pulsatilla, 12th attenuation, is most appropriate when the anxiety is greatest at night, attended by loose, green, mucous stools and vomiting.—*Bryonia* is more suitable if there be costiveness and spasms of the chest, and if it do not relieve or entirely cure, should be followed by *Nux vomica*. If the patient

complain of bitterness in the mouth; great thirst; constant chilliness; pressing pain about the liver, and has a yellow tinge of the skin and eyes, *Mercurius solubilis*, 6th attenuation, will be most efficacious.

As inflammations of this kind are not to be classed with the unimportant ones, it will therefore be well to call in a physician in time.

Loins, Pain in the.

Pains of the loins are of various kinds, and for the most part depend on altogether different causes; generally the cause lies in some deep-seated malady, the removal of which cannot be left to the laity, as it requires more prudence and anatomical knowledge than can be expected from one uninstructed in medicine. On this account I shall present here only some of those pains in the loins which are most frequently met with, with their obvious causes, at the same time remarking that on their return the advice of the physician must be sought.

Excesses in the use of spirituous and stimulating drinks are very common causes of pains in the loins, also obstinate constipation, sedentary habits, and taking cold, may cause them. In all these cases *Nux vomica* may be given with advantage, especially when the pains seem as if the loins were beaten, and at times extend between the shoulders, and also towards the sides, with frequent ineffectual pressure in the rectum. If the pain is very severe, of a wrenching or cutting character, and turning and moving the body, when lying as well as walking in an erect position, is almost impossible.

Occasionally, after heavy lifting, after a fall, push, or stroke on the back or loins, an acute cutting pain takes place in these parts, which is so severe that the patient cannot cough, sneeze, take a deep breath, or walk, without the greatest suffering. In cases of this kind, a few doses of *Arnica*, 3d attenuation, will generally afford speedy relief. If the pain be occasioned by overlifting or streching the arms, *Rhus toxicod.* will be preferable to *Arnica*.

LOVE, DISAPPOINTED.

See Grief.

Lumbago (Lumbago Rheumaticus).

This is a rheumatic affection, and is characterized by a deep seated violent pain in the loins, sometimes attended with very acute symptoms, although rarely accompanied with the same phenomena as inflammatory rheumatism. There is no swelling or redness of the lumbar region. The most excrutiating pain is induced by any change of posture, and it is difficult to move any part without increasing the sufferings.

Remedies.—Aconite, Bryonia, Nux vomica, Rhus toxicod., Belladonna, Pulsatilla, and *Mercurius vivus,* are most serviceable.

Aconite must be given at the commencement, especially if the disease be accompanied by much fever.

Bryonia, when the pains in the back are exceedingly severe, compelling the patient to walk in a stooping posture; aggravated by the least motion, or draught of air, and attended with a sensation of general chilliness.

Nux vomica is especially indicated, when the part affected feels as if bruised, or as if caused by excessive fatigue; and when motion, and particularly turning in bed at night, aggravate the pain; also when accompanied by weakness, constipation and irritable temper.

Rhus toxicod., when the pains are similar to those described under *Nux vomica,* but are aggravated by *rest.*

Belladonna may follow or alternate advantageously with *Aconite,* particularly when the pains are deep seated, and cause a sensation of heaviness, gnawing, or stiffness.

Pulsatilla, when the pains resemble those mentioned under *Nux vomica,* especially when occurring in females, or persons of a mild disposition.

Mercurius vivus, against pains like those described above, but which are aggravated at night.

Lungs, inflammation of.

As inflammation of this kind always comes on suddenly and with great violence, I shall therefore present the most prominent symptoms of the disease, and likewise the remedies most suitable at the beginning, so that the relatives or friends of the patient, if a physician cannot soon be procured, may know what to do, and may not administer any wrong or hurtful article, calculated to counteract the treatment of a homœopathic physician.

The chief symptoms of inflammation of the lungs are: disturbed, accelerated, interrupted sighing, panting, audible respiration; the chest labors violently, with great exertion; the patient feels a steady, fixed pain in some part of the chest, which soon becomes active, sharp, burning or cutting, or is pressive, dull, and constrictive, with anguish. The pain, cough, and difficulty of breathing, are aggravated by respiration, assuming the erect attitude, turning or other motions. The irritation to cough, which is experienced, and with greatly increased pain, whenever the patient attempts to take a deep breath, is always felt at the most painful spot. There is always a greater or less degree of alarm and anxiety connected with inflammations of this kind. At times the cough is infrequent and of short duration; at others violent, constant and spasmodic. At the commencement of the disease, the expectoration is often absent entirely, but at times it is present at the very beginning, and is of a bloody, mucous (rusty) character. There is also great heat, and burning, hot, dry skin; violent palpitation of the heart, puffed and red face; very high colored urine, great thirst and constipation.

Aconite, 6th attenuation, is the most suitable remedy for checking the progress of the disease before the arrival of the physician. It may be repeated, according to circumstances, every two or three hours. In many cases the beneficial effects of this medicine will be strikingly manifested in the first two hours, and even in some cases a single dose is sufficient to effect a complete cure of this dangerous disease. But as this result is in no case to be foreseen or to be predicted, let not the well-meant advice be

neglected, to send immediately at the onset of the disease for an experienced physician, who will direct what further is to be done.

Should the arrival of the physician be delayed, and the violence of the disease in the meantime has been moderated in some degree, but the improvement is slow, *Bryonia* is the next best remedy, two or three drops of which may be put in half a teacupful of water, and a teaspoonful of the solution given every three hours.

If, on the contrary, in spite of these medicines, the disease still progresses, and the difficulty of breathing, acute pain and constant dry cough become very severe, accompanied with expectoration of a rusty appearance, *Phosphorus* must be given, and repeated every three hours.

M.

MANIA A POTUA.

See Delirium tremens.

Measles. Rubeola.

This well known disease, which is for the most part of a mild character, always sets in with symptoms of catarrh, for instance dry cough, hoarseness, rawness and tightness of the chest, with pain in the throat and some difficulty in swallowing, snuffling, frequent sneezing, and acrid discharge from the nostrils; redness, heat and pain of the eyes; sensitiveness to light; increased flow of tears; swelling of the eyelids, headache, &c. After a few days the febrile symptoms and heat of surface increase, and red, uneven, raised spots in patches which mostly run together, make their appearance, giving the skin a sort of marbled appearance. They show themselves first in the face, and last on the feet. The redness only partially disappears on pressure, and quickly returns. At this period the fever is at its height; it gradually abates, and by the sixth or seventh day the eruption disappears, the skin going off in minute scales almost unnoticed.

In a case of this kind, where the disease goes on so quietly,

there is often nothing medicinal requisite. If the fever should be considerable, it will be much moderated and shortened by a few doses of *Aconite*, 12th attenuation, three or four globules, or one drop in half a teacupful of water, and a teaspoonful taken every three hours.

The catarrhal symptoms with which the disease commonly makes its appearance, are mostly relieved by *Pulsatilla*, 12th attenuation, which remedy will also frequently modify the disease very materially. This medicine often acts as a prophylactic or preventive to measles, if given to children who have not yet had the disease (when it prevails epidemically) every three or four days in the dose above directed.

If the catarrhal symptoms become still more considerable, without being followed by the eruption, a dose or two of *Tinctura sulphuris* will generally bring it out.

Should the measles be attended with violent fever, headache, delirium and sore throat, one or two doses of *Belladonna* may be given, either before or in alternation with the *Aconite*.

Against the tedious cough which at times remains, *Ipecacuanha*, several times repeated, is generally the best remedy; and if it does not remove all the sequelæ, it may be followed by *Hepar sulphuris*.

Megrim. Hemicrania.

See also Headache.

This is a one-sided headache, generally confined to a small spot, and most commonly affects females rather than males. If the patient wishes to be freed from this complaint, he or she must be entirely governed by the rules of diet prescribed in homœopathy, and in particular strictly avoid coffee, as that is the most fruitful cause of its existence. The following symptoms are demonstrative of the latter assertion.

The patient complains of a severe one-sided, drawing, pressing headache, with a sensation as if a nail were driven into the head; in other cases of a feeling as if the brain on the affected side were torn, bruised, or crushed to pieces. Against headache of this kind, *Nux vomica* is the most serviceable remedy, which

in some cases it will be necessary to follow by *Ignatia* or *Pulsatilla*, and after these again another dose of *Nux vomica*.—This medicine is also indicated when the one-sided, drawing or pressing headache commences early in the morning, gradually becomes more and more severe, and finally attains such a height, that the patient becomes almost quite unconscious, or throws himself about as if frantic.

For the speedy relief of these severe pains, *Coffea cruda*, 3d attenuation, is the most suitable remedy, even for those sufferers who have been using coffee daily as a drink. This medicine will often remove the disease completely if frequently repeated, and the use of coffee as a drink is meanwhile avoided, as I have repeatedly experienced.

Besides the three remedies mentioned here, there are others, which are useful against such complaints; but these, to be used successfully, require a more accurate examination of the symptoms as well as of the exciting causes of the disease than can be expected from the laity, for which reason I have not introduced them here.

MENSTRUATION, IRREGULARITIES OF.

See Dysmenorrhœa.

Milkfever.

This name has been applied to several morbid symptoms, which at times make their appearance with the first secretion of milk in the breasts after delivery. These symptoms consist in a slight chill, followed by heat, anxiety, thirst, restricted respiration; drawing pains in the back, extending towards the breasts; headache; and finally sour perspiration. In many lying-in women no such fever takes place; but where it occurs, it doubtless arises less from the secretion of milk, than from the irritation caused by too great a quantity pouring into the milk-vessels and powerfully distending the breasts. This fever may likewise be occasioned by laceration of the perinæum and neck of the uterus, or by wounds of the sexual organ. In these last cases *Arnica montana*, 3d attenuation, is the best remedy, but in the first,

Rhus toxicodendron, or *Belladonna* and *Bryonia*, each in a high attenuation. If emotions of the mind are the cause of such fever, the reader will find the proper medicine pointed out under the appropriate head.

If the milk dries up at once in the breasts, it most readily takes a direction back to the uterus, excites in it again the scarcely extinguished activity, and often places the woman in imminent danger; or it may take its course to other important organs, viz. the peritoneum (lining membrane of the abdomen), the intestinal canal, the head, &c., and thus excite the many-formed, but highly hazardous puerperal or childbed fever. This may frequently be checked in the beginning, and the secretion of milk restored again by the timely administration of *Pulsatilla*, 12th attenuation. But if this remedy fail to effect this, then although I have likewise cured childbed fever with it, the aid of the physician is indispensably necessary, as other medicines, peculiarly adapted to each form of such fever, and precisely corresponding, are required.

Milk-crust. Milk-scab. Crusta Lactea.

See also Face, scabs on the, in children.

This is mostly an affection of young infants, and is characterized by an eruption of numerous small white pustules, appearing in clusters upon a red ground. They generally make their appearance first on the face, particularly the cheeks and forehead, from whence they sometimes spread over the entire body. In a short time they become yellow, or dark colored, burst, and form thin yellow crusts.

The eruption is often attended by considerable redness and swelling of the surrounding parts, and with troublesome itching, which renders the child exceedingly restless and fretful, and causes it to rub the affected parts constantly, by which the scabs are torn off, and the disease aggravated.

Treatment.—Aconite, Rhus toxicod., Sulphur, Hepar sulph., and *Arsenicum*, are the chief remedies.

Aconite should be administered first, when the eruption is

surrounded by redness and inflammation of the skin, and the patient is very restless and uneasy. It may be repeated night and morning.

Rhus toxicod. may follow *Aconite*, if after the lapse of a few days the eruption appears to be but little improved. Repeated same as the last.

Sulphur will be beneficial after *Rhus toxicod.* when the latter fails to produce a favorable change, or when the improvement progresses but slowly. These two remedies may be administered alternately in many cases with great advantage.

Hepar, *Sulphur*, and *Arsenicum*, will be found useful in obstinate or complicated cases.

Lycopodium, *Sepia*, and *Graphites*, may also be serviceable in tedious cases.

MISCARRIAGE.

See Abortion.

MOUTH, BABY'S, SORE.

See Aphthæa.

Mouth, Scurvy, or Canker of the. Cankrum oris.

This is a disease of the interior of the mouth, which usually begins with burning, heat, redness and great soreness of the gums, the inside of the lips and cheeks, and the tongue and palate; it is attended by an intolerable putrid smell, painful swelling of the glands of the throat, and a discharge of a copious, viscid, very fetid mucus or saliva. The gums are spongy, and much swollen; small suppurating ulcers also appear on the gums, which emit a highly offensive smell. The remedy most effectual, and which will generally remove the disease in a few days, is *Mercurius solubilis*, in the 6th attenuation. It may be repeated three or four times in a day. If the disease is somewhat better after three or four days, *Tinctura sulphuris* may be substituted for the *Mercurius solubilis* with advantage.

MUMPS.

See Ears, inflamed, &c.

N.

Navel-rupture.

Navel rupture is often met with, and may arise in consequence of pulling at the navel string, or long continued soreness of the navel, of dressing the child too tight, and especially from frequent crying. The rupture may project from half an inch to an inch or more. Though a well applied belly band is in many cases of essential service, and is often sufficient of itself to heal a navel-rupture, yet it does not always answer the purpose, as it is liable to be displaced, especially when children cry much. In troublesome cases I generally make use of a piece of linen laid in four or six folds, or a well-padded half-penny, as a compress, which I lay upon the navel after having carefully reduced the rupture, and fasten it by strips of adhesive plaster laid crosswise over it. At times it is not amiss to wash the part several times a day with spirituous preparations, such as a few drops of rum or brandy in water, &c.

NETTLE-RASH.

See Fever, miliary.

NEURALGIA FASCIALIS.

See Facial neuralgia.

Nightmare. Incubus.

This affection comes on only during sleep, generally when lying on the back, and when the patient has a full stomach, or is plethoric (full of blood). This sleep, however, is not sound and complete, but only a half-sleep, in which the patient retains so much consciousness, as to know that his sufferings are not real, but imaginary. Yet notwithstanding this, he is not able voluntarily to shake off this condition; he cannot rest on his couch, much less rise up, neither can he cry out. Commonly this disease makes its attack in the first sleep, mostly after dreaming, and under the appearance of an animal or spectre which seems to approach the bed and spring on the sleeper, causing a

sensation as of an oppressive load on the body, chiefly on the breast, which is followed by great pressure, or an anxious feeling of impending suffocation. The attack continues but a short time, but is often renewed several times in the same night. The waking up is mostly sudden, and leaves behind a feeling of languor; and is sometimes followed by sweating, chiefly about the head, neck and chest, trembling, palpitation of the heart, and headache.

As little danger as there may be in such a case, of itself, still the patient would gladly be freed from it, since it occasions unpleasant and anxious interruptions of sleep. In order to be relieved of this disagreeable malady, it is indispensable that the person subject to it should abstain from the use of coffee and all stimulating drinks, so that he may not increase the congestion and stagnation of blood in the abdomen, from which it often originates. However, it is not often practicable, altogether to obviate by these preventive rules alone, this morbid condition of the vascular and nervous system, though not unfrequently an essential abatement is brought about thereby, but it requires also the aid of suitable medicines. The principal of these is *Nux vomica*, administered in doses of three to six globules of the 12th attenuation, especially when a too free use of highly seasoned food and spirituous drinks may have invited the attack; or when excessive loading of the stomach may have occasioned it.

If a day or two previous to an attack of nightmare there should be agitation of blood; sudden flushes of heat in the face; palpitations of the heart, with anxiety and restlessness; oppressed respiration; heat and thirst, *Aconite*, 12th attenuation, in doses of three to six globules, will be the most suitable remedy. It may be repeated every 12 hours, until there be an abatement of the symptoms.

One of the most valuable remedies in this form of disease is *Opium*, in the 3d attenuation; especially when the patient lies in a state of lethargy, with snoring and rattling in the throat; open mouth and half-closed eyes; is not capable of being roused; the face dripping with cold sweat, anxious countenance, the

breathing often spasmodic and by starts, and occasionally also convulsive jerkings of the limbs.

It may be mentioned here that this form of disease sometimes assumes a character, with the treatment of which a layman cannot trust himself, since it often depends on deeply hidden causes which require an experienced physician to explore.

O.

Offensive Breath.

This is a malady of frequent occurrence, and for young girls of marriageable age it is peculiarly disagreeable and troublesome. It is removed most generally by a few doses of *Aurum*, 6th attenuation, unless it be occasioned by hollow teeth.—If *Aurum* alone is not sufficient, *Belladonna* and afterwards *Sepia* may be given.—If bad breath is only perceived after eating, *Nux vomica*, every evening, and in five or six days a dose of *Sulphur*, will be the best remedies. On the contrary, if it is most observable in the evening or at night, *Pulsatilla*, and afterwards *Sulphur*, will be applicable.

Onanism. Self-pollution.

The name itself sufficiently indicates the nature of this evil, which is more prevalent than many people imagine; and to the great detriment of the young, it is generally misapprehended by parents and tutors, who think the ground of the evil is to be sought only in moral depravity. But nevertheless this is not always the case, as any unprejudiced person will admit with me, when I affirm that there may exist also a physical cause inducing an itching at the sexual organs, by which the child feels tormented, desires to relieve itself, and debilitates itself. This irritation is observable even in first dentition, in worm diseases, in predisposition to affections of the brain, in scrofula, &c. Occasional causes are most of all to be met with in schools and other

institutions for education, and teachers should keep a strict watch over the immoral children, to see that they do not find an opportunity to seduce the innocent, and infect them with this vice. The consequences of this foul practice, when long persisted in, are: debility both of body and mind. At first a general wasting away takes place, the bodily powers diminish, and mental sluggishness supervenes, with a dreamlike condition and lethargy; gradually paleness of the face, circles about the eyes, indigestion, want of attention, especially when this vice has been long practised, headache, &c., set in. These symptoms are not always all met with at the same time, and they may be removed by the powers of nature, if this vice is desisted from in time. Where the latter is not done, and the subject continues to indulge in this practice, so destructive to body and mind, it is but natural that the sufferings described, both physical and mental, should continue to increase, and finally lead to entire disorganization.

In reference to the treatment, if worms be the exciting cause, the proper remedies will be found under the articles "Vomiting", "Colic", and "Itching of the Anus". When, on the other hand, agitation (ebullition) of blood, or determination of blood to any particular organ be the exciting cause, the necessary remedies will be found under these heads.—If, however, the disease depends on an immoral course of life, the following remedies will be beneficial, providing the patient lives chastely, curbs his passions, and combats this vice with the whole power of his will. The most specific remedy is *China*, 24th attenuation, repeated every three or four days. If this, after several repetitions, has not a salutary effect, it may be alternated with *Phosphoric acid* and *Conium*, in the higher attenuations.

OVERFEEDING OF CHILDREN.

See Vomiting.

P.

PALPITATION OF THE HEART.

See Heart, palpitation of.

Pleurisy. Pleuritis.

The most striking symptom of this disease is a stitch in the side more or less acute, which makes breathing exceedingly difficult and painful, preventing the patient from taking a full breath. Some relief is obtained by grasping the ribs and pressing firmly on them; the patient can lie well on the sound side, but not long on the affected one. At times a short dry cough attends the disease, but frequently it is absent, at least in the commencement. Heat is always present, sometimes in a great, at others in a moderate degree.—Sharp north and west winds (in Germany east winds) occasion pleurisy most readily.

The chief remedy is *Aconite*, a few globules of the 12th attenuation, of which remedy *Hahnemann* says: "In measles, in scarlet rash, in acute pleurisy, &c., its virtues are almost miraculous, if given alone to a patient who is kept somewhat cool, and avoids every other medicinal article, even vegetable acids, a single dose will often be sufficient to affect a cure."

In the majority of cases, however, advantage will be derived from *Bryonia*, or *Sulphur*, after the fever has been subdued by *Aconite*.

Poisoning.

I think it advisable to make some remarks on the symptoms of poisoning, in order that the laity may do something against it, while the physician is being sent for. Although I do not deem it proper to give the medical antidotes, as the laity are anxious and alarmed in cases of this kind, and may easily mistake the proper remedy, or perhaps may give them too indiscriminately.

Poison may be suspected, when a person otherwise in good health, without any known cause, is taken suddenly and unexpectedly ill with unusual and severe symptoms; at the same

time strict regard must be paid to what he has eaten, to his occupation, circumstances and relations.

Narcotic poisons are the most dangerous, and are mostly made use of, as they occasionally kill suddenly and without any striking symptom. They indeed act significantly by the medium of smell. To this class belong the vapor of charcoal, the mephitic vapor of confined places, and the concentrated odors from flowers which are otherwise not poisonous; also opium, berries of deadly nightshade, thorn apple, henbane, hemlock, cocculus Indicus, poison mushrooms, &c. The most common symptoms of this class of poisons are: pressing pain and great heaviness at the stomach, anxiety, nausea, vomiting, drowsiness, dulness of the head, confusion of ideas and of the understanding, giddiness, lethargy, and great inclination to sleep. The patient becomes powerless, stammers incoherently, trembles; his pulse is variable, mostly slow, but occasionally strong and quick. To these succeed stupor, laborious, rattling respiration, wild gestures, mania, convulsive twitches, paralysis, &c.

Acrid poisons may be known by the following symptoms: the patient complains of an acute, burning, and very painful sensation in the fauces, throat and stomach, also of a griping pain in the pit of the stomach, intense anguish, nausea and vomiting, by which blood is often thrown up; at times there is violent diarrhœa, at others constipation, with distention of the abdomen, and the most severe cutting pains.

The vomiting which is a usual accompaniment must not be checked, but on the contrary it must be encouraged by tickling the throat with a feather, or by taking strong *black coffee*, of which the patient may drink abundantly. Coffee is particularly serviceable in poisoning from narcotic substances, such as opium, nux vomica, thorn apple, poison sumach, bitter almonds, prussic acid, belladonna, valerian, hemlock, and also that from antimony, phosphorus and phosphoric acid, when drowsiness, intoxication, loss of consciousness, or confusion of mind are present. One of the most appropriate remedies in such cases is likewise rich *cream*, of which the patient may tak as much as he can

possibly bear. *White of egg*, mixed with water, should be given freely as a drink, in cases of metallic poisoning—from quicksilver, verdigris, tin, lead, and sulphuric acid, which is attended by constant pains of the stomach and bowels, urging to stool, or diarrhœa, and soreness of the rectum.—A solution of common white soap, in four times its quantity of hot water, will also have a good effect; a teacupful of which may be drank at a time.—Sweetened water is likewise beneficial. The symptoms of poisoning from vegetable and animal substances (particularly Spanish flies) are removed, after the stomach has been cleansed by exciting vomiting, or when vomiting and diarrhœa, paleness of face, coldness of the limbs, and loss of consciousness already exist with most certainty by frequent small doses of spirits of camphor—a drop every three or four minutes—diminishing the frequency as the symptoms abate. This is the best treatment to pursue until the arrival of the physician, after which he will direct what is best to be done.

Puerperal Fever. Childbed Fever.

During lying-in, mostly through imprudence, a number of complaints are brought on, which, if only in some degree attended by fever, receive the name of childbed fever. A disease of this kind, which is dangerous in the beginning, setting in with debility, confusion of the head, and great anxiety of mind—seldom appears later than the tenth or twelfth day. The chief symptom of this complaint is a burning or cutting, colicy pain in the lower part of the abdomen, or about the navel, which appears at the same time with the fever, or even before it; at first this pain is moderate, abating, or disappearing entirely for a short time, but soon it grows to an alarming height, and is increased by the slightest pressure or motion; the abdomen is also distended. At times, also, this disease comes on like inflammation of the lungs, brain, &c. The milk generally soon disappears, and afterwards the lochia also; translations of the milk likewise often take place (hence the expression: "the milk has got into the head"). There are usually also frequent, copious,

debilitating sweats which have a sour smell, and seldom produce even temporary relief. The following are the principal exciting causes: cold, suppression of the lochial discharge, and the secretion of milk; vitiated stomach; and especially emotions of the mind, such as grief, fright, anger, &c. Difficult and tedious labors, too great warmth, abuse of chamomile tea, the applications of cold to the abdomen to check hæmorrhage may likewise give occasion to this disease.

It is not my intention to commit the management of this dangerous disease to the laity, but only to indicate what will be necessary at the onset, while the physician is being sent for. If the disease presents an inflammatory appearance, a few doses of *Aconite* at first will be most suitable, and which are to be repeated the oftener, the more violent the fever. If there be frequent returns of anguish, *Ipecacuanha* will be most appropriate after the fever is moderated by the use of *Aconite.* It may be frequently repeated, and followed, if necessary, by *Bryonia.* When the brain is attacked, *Belladonna,* in a high attenuation, is most serviceable after *Aconite.* — If the disease has been brought on by violent anger, *Chamomilla* must be given after *Aconite*; and if the lochia has been suddenly suppressed by emotions of the mind, such as fright, anger, &c., or by cold, the disease will be best combatted by a dose or two of *Pulsatilla.* If the disease arise from too free use of coffee or chamomile tea, and there are severe pains of the back and loins, stitches and pains as if from a bruise in the lower part of the abdomen on motion, from touch, coughing and sneezing, with nausea and vomiting, or costiveness, &c. *Nux vomica,* 12th attenuation, is the appropriate remedy.

QUINSY.

See Throat, sore—inflamed.

R.

RASH.

See Fever, miliary.

Rheumatism.

Rheumatism generally occurs in the transition of winter into spring, and of summer into autumn, when the weather is unsettled, and the air moist and cold; it is very frequently met with, and mostly arises from exposure to cold. Ordinarily it is not considered of much account, and the patient drinks freely tea of some kind with the view of producing sweating, and thereby removing the disease in this case as in miliary fever—few cases however are removed by exciting perspiration, and even in these the appropriate homœopathic remedies are most serviceable; in most cases, however, sudorific medicines are injurious, and at least change the character of the malady, making it more obstinate, giving rise to fever, headache, and relaxations from the great loss of moisture, and always leaves behind a greater predisposition to returns of the complaint. Hence the patient is exposed to the danger of getting the so-called chronic Rheumatism, which is only moderated for any length of time by a peculiarly favorable state of the atmosphere, but is again brought on by the slightest change therein, sometimes more, sometimes less severe, and the treatment of which is always attended by great difficulties. Rheumatism is nearly allied to gout, and consequently there is room to apprehend that by neglect and numerous outward influences, a chronic rheumatism may be invited which may degenerate into gout. Under homœopathic treatment rheumatism itself disappears, and leaves no trace of its existence, the patient need not keep his bed, but has only to guard against taking cold, and endeavor to maintain a moderate degree of perspiration.

The treatment is always to be regulated according to the seat, and the different kinds of pain. Rheumatism with active fever, evident signs of inflammation, (redness, swelling, &c.,) and very acute tearing spasms, in subjects of a full habit always requires

the administration of *Aconite*, 12th attenuation, repeated every four or six hours. But if the pains are not entirely removed by this medicine, a dose or two of *Bryonia*, 12th attenuation, will mostly be sufficient, particularly when there are tearing, pressive pains, with shining red swelling, and a feeling of stiffness, which are aggravated by motion and at night.

Chamomilla, 3d attenuation, is indicated, if on the contrary there is general inquietude, heaviness in the limbs, pain in the joints as if they were beaten; drawing or tearing pains in the joints, worse at night, and alleviated by sitting up and frequent motion in bed; the affected part, the arm, leg, or hips, feel as if it were palsied, or disabled from over-exertion; pains in the small of the back as if beaten; the pains occasionally appear in the teeth, and are of a drawing, gnawing character, affecting the whole side of the face, and extending even to the ears; the patient fears to move, is inclined to lie down, is fretful, chilly, cannot sleep, is very weak and tired, especially soon after waking, so as hardly to be able to stand. Usually soon after this remedy is taken, a mild perspiration breaks out, which must be encouraged.

Dulcamara, 3d, and *Rhus toxicod.*, 12th attenuation, are also very important remedies in complaints of this kind. The first, especially in those which take place immediately after exposure of the limbs to cold; the latter in the tense acute pains, which are worse when at rest, or on rising from a sitting posture than by other motion; and are aggravated also in the open air, and on being touched.

Belladonna is most suitable when there is rheumatic fever with headache and swelling of the muscles of the neck and throat, in which the least motion excites the most severe pains, with a simultaneous attack in one knee joint without swelling, which can only be maintained in the bent posture; also against pressing or tearing pains seated deep in the bones, as if an electric shock had been communicated to the neighbouring joint, with painful dull pressure, which is only alleviated by counter-pressure, and is aggravated by motion.

Pulsatilla, 12th attenuation, against rheumatic drawing pains, most severe in the evening, which appear mostly in the limbs, and especially in the flesh near the joints, attended from time to time with a sensation of burning or pain in the ankle, as if beaten; painful lameness of the arms and hands; feeling of general debility; restless sleep; tossing from side to side, and inability to keep warm in bed; cold chills, pain in the muscles of the abdomen as if bruised, particularly when coughing, sneezing or laughing. This kind of rheumatism often changes from one limb to another, and is attended by swelling of the affected part. This remedy is also useful, when both sides of the neck are swollen and painful, with a sensation on motion, as if there was a phlegmon or abscess there.

Bryonia, 12th attenuation, is most useful against pains on motion, breathing, &c. as if beaten in all the joints and ligaments of the arm, the breast, the back and the nape of the neck, which are also felt when sitting and lying down, but are aggravated by motion; pain in the small of the back as if crushed by a wheel, soreness and drawing pains in the tendons of the muscles, where they are inserted on the ends of the bones, particularly soon after rising from bed. Pain in the limbs on motion, as if dislocated, stiffness of the body on motion, especially after rising from sleep at noon. Passing the whole surface of the magnet over the part may likewise be serviceable in cases of this kind.

Nux vomica, 12th attenuation, is indicated when there is constriction and pressure in the outer parts of the chest; stitches in the muscles of the chest, aggravated by breathing; stitches between the shoulder blades on motion and breathing; pain in the shoulder joints and blades as if bruised; attacks of acute pain in the back of the neck and vertebræ, as if from a load on the neck; stiffness of the back; pain in the abdominal muscles and small of the back as if bruised, which renders turning in bed exceedingly difficult and painful; great irritability; the patient complains loudly of his pains, scolds and dislikes to be spoken to, is restless during sleep, has chilliness, and cold hands and feet.

Colchicum, 6th attenuation, is also a very useful remedy in rheumatism, especially that which appears in the damp, wet, cold weather of autumn, and is often attended with swelling of the joints, redness and severe tensive pains.

Ringworm. Herpes Circinnatus.

This is a common affection, especially in children, and consists of an eruption of small circular rings of red spots, the skin within the ring having a natural appearance at first, but subsequently becomes rough, of a reddish hue, and scales off as the eruption dies away.

The disease generally appears on the face, neck, arms and shoulders, and frequently disappears of itself after two or three weeks duration.

Sepia: A dose or two of this remedy will generally remove this affection. Should it fail, the alternate administration of *Rhus toxicod.* and *Sulphur* every four or five days, will mostly prove effectual.

Calcarea, *Causticum*, and *Sulphur*, have also been recommended in obstinate cases.

S.

Scald Head. Tinea capitas.

This is a disease of the hairy part of the head, which mostly appears between the first and twelfth year of age, and is known by the following symptoms. The child complains of an itching and burning pain on certain parts of the head, where small, round, pointed efflorescences on an inflamed rose-colored ground make their appearance, which are hard at their base, but soft and yellowish at their points. They gradually become more elevated, burst, and give out a viscous, thick, offensive discharge, by which the complaint is more and more spread, the hair is glued together and vermin are created. Soon scaly, thick, raised, hard crusts are formed, under which the secretion of matter still goes on, contributing to the thickening of the crusts or scabs.

The discharge is also usually accompanied by swelling of some of the glands of the throat, neck, and head.

The chief remedy in this form of disease, according to my experience, is *Rhus toxicod.* in the 12th attenuation, a dose of which may be given every three or four days, or oftener. To effect a complete cure, several doses will be requisite.

The attendant swelling and hardness of the glands of the throat, neck and other parts of the body, with remarkable paleness of the face and flabbiness of muscles, are best relieved by *Dulcamara*, in a low attenuation, repeated at intervals of 24 hours.

If these remedies should not be sufficient, a few doses of *Tinct. sulph.*, at long intervals, should be given, and will often speedily change the character of the disease and cause it to take on a more healthy action. If the eruption be of a moist nature, and *Sulphur* is found ineffectual, *Staphysagria*, 12th attenuation, is at times beneficial; *Baryta acetica*, 6th attenuation, and *Hepar sulphur*, are also serviceable in some cases.

Scarlet Fever.

In order that the laity may obtain some knowledge of the genuine scarlet fever, and may be able to distinguish it from the so nearly allied scarlet rash, but by no means to entrust them with the management of a disease often so fatal, I shall accurately point out the symptoms of this affection of the skin.

The genuine scarlet fever generally attacks children previous to the twelfth year of age; the redness of the skin is, like erysipelas, of a fiery color; a bright scarlet, which disappears on pressure with the finger at once, leaving a white spot which immediately becomes red again when the pressure is removed; this smooth, shining, and perfectly even redness of the skin, is never circumscribed, but is imperceptibly lost in the adjacent white parts. The eruption usually appears first on the uncovered parts, on the face, on the neck and breast, on the hands and feet, is attended by swelling and gradually spreads over the rest of the body. At the same time with this redness the heat and fever appear. The

greater and more extensive the redness of true scarlet fever, the more violent is the fever. There is no sweating while the disease continues; at times after the redness disappears, and the skin begins to scale off, perspiration occurs. The attendant inflammation of the throat is always more or less active.

Belladonna is the remedy recommended by *Hahnemann* as the preservative against this disease, when it prevails as an epidemic, with which view a few globules of a high attenuation may by given every four or five days.—But medicines which prove themselves preventives of diseases, must also possess to some extent the power of curing them, when they make their appearance. And this is the case with *Belladonna* in scarlet fever, which acts not only as a defence but as a cure, whether the disease be in its incipient stage, or have fully developed itself. The proper dose is the same that has already been often directed.

If scarlet fever be complicated with scarlet rash, or if other important morbid symptoms be connected with it, the presence of a physician is indispensable.

Scarlet Rash.

This disease, which appears to be so similar to scarlet fever, presents nevertheless some striking differences.

The scarlet rash attacks persons of all ages; the eruption consists of purplish red spots or patches, that leave no white mark on pressure with the end of the finger, but remain unchanged—of a dark-red color; these spots are thickly covered with dark-red pimples or granules, which are very little raised above the level of the skin, but are deeply imbedded in it, and may be distinctly seen and felt with the finger. This eruption attacks indifferently any part of the body, but prefers those that are covered, and the bendings of the joints; it is usually unattended by swelling. The accompanying fever has no definite regular course. The sudden recession of this eruption is often attended by great danger. The eruption may be very extensive, or scarcely perceptible, without regard to its favorable or unfavorable character. Perspiration is observable only on the parts

covered by the eruption. It is also usually accompanied by a more or less severe pain in the throat.

In this disease, so different from genuine scarlet fever, *Belladonna* is neither useful as a preventive, nor as a cure; *Aconite*, however, in the 12th attenuation, is serviceable both as a prophylactic and cure; it may be given every six or eight hours, if the heat, restlessness, and anxiety, are not diminished after the first dose. *Coffea cruda*, 3d attenuation, will afford relief, if the patient complain of severe pains, and is fretful and irritable. It is, however, adviseable to consult a physician at the outset of the disease; the more so, as the frequently recurring epidemics appear to assume a more and more threatening character, and the disease is now seldom as harmless, as was formerly the case. If the disease be complicated with true scarlet fever, *Dulcamara*, repeated every four or six hours, is preferable to every other remedy.

SCALDS.

See Burns.

Sciatica. Neuralgia sciatica.

Sciatica, like lumbago, may be acute, but it is more frequently chronic. It is characterized by severe pain in the region of the hip joint which shoots along the course of the sciatic nerve to the ham, sometimes extending to the foot, and is accordingly neuralgic in its character.

The most common cause of sciatica is exposure to cold, especially to damp and cold east winds in spring and autumn.

The most serviceable remedies are: *Aconite*, *Colocynth*, *Rhus toxicod.*, *Nux vomica*, *Ignatia*, *Chamomilla*, and *Arsenicum*.

Aconite is indicated in the beginning when the disease is attended by fever.

Colocynth is particularly applicable when the affection is seated in the right hip, and has been excited by a fit of anger.

Rhus toxicod., when the pains are aggravated by rest, and relieved by motion or warmth.

Nux vomica, when the pain is attended by a sensation of stiff-

ness or contraction of the limb; also when a feeling of paralysis or torpor with chilliness, is experienced in the affected part.

Ignatia, against cutting pains, particularly on moving the limb.

Chamomilla, when the pains are worse at night, and attended with excessive sensibility.

Arsenicum, in cases where the pains are acute and digging, with a sensation of coldness in the part affected; also when the pains are periodical. It is likewise useful in cases attended by emaciation.

Skin, Itching of the.

Intense itching is sometimes occasioned by colorless smooth and tender elevations of the skin, without the formation of pustules, scaling off, or becoming pointed and without presenting the proper appearance of an eruption. The uninterrupted scratching often gives rise to pain, and to a serous discharge, which thickens in a small, thin, concrete scurf, sometimes forming real pustules. This itching is constant, and most troublesome in the evening, and when warm.—It is most speedily relieved by a few doses of *Sulphur*, in the higher attenuations.

Itching of the skin of a fine, pricking, burning character, as if from fleabites, on the whole body, without any visible cause, which comes on chiefly in the evening after going to bed, and which readily disappears from the part that is scratched, and appears on another, is a characteristic indication for *Ignatia amara*, and consequently yields readily to this remedy. It may be given in the 12th attenuation, and repeated two or three times.

Sleeplessness.

This is an evil that no age is free from, and when of long continuance, it is exceedingly troublesome, and even prejudicial to health. It is very common with children, and is then mostly owing to physical pain, and occasionally to fear from being left in the dark. In grown persons, excessive literary labor continued late at night, is frequently the cause; likewise the use of too strong coffee, which many persons habituate them-

selves to for the purpose of keeping awake, and to cause greater activity of mind; want of pure, wholesome air; weakness of the digestive powers, and overloading the stomach, are also causes.

Coffee is one of the most fruitful sources of this malady, and discontinuing the habitual use of it alone is frequently sufficient to effect a cure. For those who acknowledge that they have made too free use of it, for the purpose of keeping off sleep in order to accomplish a great deal of mental labor, there is no better remedy than *Nux vomica*, 12th attenuation; the coffee must also be dispensed with for a time at least. This medicine not only destroys the injurious effects of coffee, but has also a good effect against the sleeplessness, as well as against that excessive irritability which is brought on by frequent, long continued mental exertion. The second night after taking it, some improvement will generally be perceived, which will increase daily.

When the digestive powers have been impaired by overloading the stomach, or by making use of highly seasoned and numerous incongruent articles of food, thereby causing costiveness, flatulency, sleeplessness, &c.; *Pulsatilla*, 12th attenuation, will be the most efficient remedy.

The complaints of sleeplessness, too long sleep, frequent waking, falling asleep too late, and the like, which are consequent on advanced age, are too numerous and require too nicely detailed statements to make them a subject of special treatment here.

The sleeplessness of children is not only of itself a hindrance to their growth, but is also very troublesome to mothers; frequently, however, they themselves are to blame for giving their children unsuitable, unnatural food, or stuffing them with chamomile and fennel tea; all of which disturb digestion, excite colic, or gripings, and prevent sleep.

Chamomilla, the 3d attenuation, may be given with great benefit in sleeplessness, provided chamomile tea has not been taken, especially when attended with flatulency, distention of the abdomen, &c.

But if chamomile tea has been taken, and the child suffers in no other way than from great wakefulness, *Coffea*, 3d attenuation, will be most suitable. This remedy is also of great benefit in the sleeplessness that follows excessive joy, an agreeable surprise, or long night watching.

Sleeplessness, attended with constant crying, drawing up of the limbs to the abdomen, turning and twisting of the body and the head, or even with diarrhœa, is frequently cured by a few passes of *Mesmerism*.

Belladonna will mostly relieve the sleeplessness of children, which usually succeeds weaning, and is of several days' continuance, and which cannot be entirely ascribed to the weaning, but is doubtless owing to the unnatural irritation of the brain. It is also applicable in sleeplessness accompanied by great anxiety, restlessness, frightful images, and fear of surrounding objects.

Aconite is most appropriate in sleeplessness occasioned by mental emotions, such as anxiety, fright or fear, for instance. This remedy may be given in repeated doses, and if it fails, followed by a dose or two of *Opium*, particularly when the sleeplessness is accompanied by visions of ghosts, wonderful shapes, &c., or when it takes place in old people.

Ignatia, likewise, in repeated doses, will be beneficial when the sleeplessness has been brought on by care, sorrow, affliction, unpleasant thoughts, and other depressing emotions of the mind. On the contrary, *Moschus* will be most suitable when nervous irritation has given rise to it in hysterical and hypochondriac persons.

Small Pox.

This is an eruptive, contagious disease, attended with fever, which, as a general rule, attacks a person but once during life. It usually sets in with slight feverish symptoms, such as headache, weariness, fretfulness, disposition to sleep, congestion of blood to the head with bleeding at the nose, drawing pains in the limbs, &c. After these symptoms have continued with more or less severity for three or four days, red pimples make their

appearance in the skin, first in the face, and then on the other parts of the body; these gradually become more elevated, and in about 48 hours from their first appearance, change to pustules. After three or four days more, the pox-pustule is more fully developed, and fills, first at the top, with a transparent serous fluid, which becomes thicker and less transparent every day, and about the eighth or ninth day from the first appearance of the eruption the pustules are matured, being then filled with a yellowish pus, and having a depression in the centre. These now dry up gradually, leaving a brownish scab, with the falling off of which the disease terminates. When the pustules are filled with lymph, the surrounding parts become more inflamed, thereby exciting a-new the so-called suppurative fever; at this period, also, in severe cases, the pustules begin to run into each other—thence called confluent.

At the commencement of the disease, *Aconite*, 12th attenuation, may be given every three or four hours, and if the fever be high, and is attended with delirium, *Belladonna*, 15th attenuation, one or more doses according to circumstances. This latter remedy is also often required in the suppurative stage, which is not unfrequently accompanied with fever and violent delirium. *Mercurius solubilis*, 6th attenuation, will be found useful after *Aconite*, or *Belladonna*, to promote suppuration; it may be repeated two, or three, or more times.

As many important symptoms may be connected with this disease, which cannot be detailed here, it is therefore advisable to send in time for an experienced physician.

Sore Throat. Inflammation of the Throat.

What is commonly called a sore throat, consists of an inflammation of the membrane which covers the inside of this part, and often goes off without the use of any medicine; at times, however, it attains to a dangerous height in a short time, and requires help. In children it ought never to be long neglected, since from the great irritability of their nervous systems, this malady not only becomes more obstinate and serious, and draws

the whole body into the morbid sphere, but also because there is a greater tendency to a repetition of the attacks of inflammation on every exposure to cold. These repeated attacks of inflammation of the throat not infrequently leave behind important swellings and enlargements of the tonsils of both sides of the glottis, extending even to the glottis itself, which can only be permanently removed by a long continued and careful treatment.

If this inflammation has spread extensively, that is, if the root of the tongue, soft palate, glottis and tonsils, and the whole mucous membrane of the throat is affected; the fever being, as is usual in such cases, of a violent grade, the most appropriate treatment is to commence by giving one or two doses of *Aconite*, before administering the remedies suited to the special inflammation of the throat.

Chamomilla, 3d attenuation, is indicated, especially for children, when there is dryness of the throat, with thirst; disagreeable feeling of obstruction in the throat on swallowing, and in bending the neck; sensation as if something were sticking in the throat like a foreign substance, causing hawking and unsuccessful efforts to clear the throat; swelling of the submaxiliary glands, with throbbing pain; fever towards evening; alternate chills and heat with fretfulness.—This condition does not always yield to *Chamomilla*, but at times requires *Ignatia amara*, 12th attenuation, particularly when there is swelling of the interior of the throat in one spot, like a lump, and swallowing causes soreness or rawness only at this spot.

Mercurius solubilis, 6th attenuation, is indicated when there is profuse flow of saliva in the mouth, which requires constant spitting; difficult swallowing with a sensation of burning in the throat; the throat seems too narrow; pricking pains in the throat, which extend to the ear; swelling of the tonsils, and pricking pain on swallowing; disagreeable taste in the mouth, with swelling of the root of the tongue, and back part of the gums; catarrhal fever, with alternate chilliness and heat in the evening.

Pulsatilla, 6th attenuation, when there is pain with rawness and soreness in the throat, as if it were too dry; cutting pain in

the throat; want of proper moisture in the throat; the glands of the throat somewhat swollen, sensitive to the touch, and seem to occasion difficulty in swallowing; pricking pain in the throat, both on swallowing and without. Chilliness which comes on in the evening, and is followed by heat, with quiet sleep and absence of thirst.

Coffea, 3d attenuation, when there is constant pain in the side of the palate next the throat, which is increased by swallowing; swelling of the lower part of the palate, the uvula, which is lengthened, and seems to the patient to be a collection of mucus at that spot, which causes him to swallow constantly; feeling of dryness and heat of the throat; irritation which excites coughing, discharge at the nose, sleeplessness and heat with irritability, and disposition to shed tears. The symptoms are aggravated in the open air.

It is to be understood that those only who are not used to coffee as a drink, can be benefited by it in cases of this kind, which are generally also accompanied with running at the nose. *Belladonna*, 18th attenuation, is likewise frequently applicable in cases of this kind, especially when in drinking, a cramplike constriction is felt in the throat, with external swelling.

Belladonna is also indicated in very violent inflammations of the throat, in which the patient is incapable of describing the pain; and on opening his mouth and pressing down the tongue, the glands of both sides of the throat (tonsils) are found to be so red and swollen as to reach almost to the uvula; the root of the tongue and palate are likewise red and swollen, rendering speech exceedingly difficult; accompanied also with burning heat of the whole body, and insatiable thirst. Inflammations of this kind, I have often allayed very speedily by giving a dose or two of *Belladonna*, followed next day by a few doses of *Mercurius solubilis*, repeated every six or eight hours.

Quinsey.—This is an inflammatory affection of the glands (parotids) behind and under the ears, which become swollen, hard and painful. It most frequently affects children. The submaxilliary glands also frequently participate. The disease begins

for the most part with symptoms of catarrh. The patient is dull and ill-humored, and complains of drawing pains in the muscles of the neck, of headache, and cold in the head. After some days the above mentioned glands begin to swell, and they sometimes become enlarged to such a degree that the under-jaw cannot be moved, and chewing and swallowing is consequently prevented. —Taking cold is the principal cause of the disease. If the fever be high, the treatment should commence with a dose of *Aconite*, which is always of great service. If the fever is mild, *Mercurius solubilis* is the most suitable medicine. But on the contrary if the glands are inflamed and of a rose color, *Belladonna* is preferable to that remedy; while *Rhus toxicod.* is indicated on the accession of nervous symptoms. In any deviation from the natural course of this disease, a physician had better be sent for.

Sores from lying a-bed. Bed-sores.

The sores caused by lying on a part, which are generally the result of protracted diseases, most commonly appear on the hips, and are very troublesome to the patient on account of the intolerable burning. In cases where these sores are threatened, it is said that a vessel containing fresh water, placed under the patient's bed, contributes much to their prevention; it is also beneficial to lay the patient upon a deer-skin, and to use feather-beds as little as possible, as mattresses are undoubtedly preferable. If the sore is already formed, a circular cushion of leather stuffed with horse-hair, or an inflated air-cushion, hollow in the middle, to receive the sore, is the means most likely to render his suffering tolerable, while the reddened or already sore part is bathed three or four times daily with a lotion of 15 to 20 drops of *Tincture of Arnica* to two or three ounces of water. Washing with lemon-juice, a common practice, I have seldom found of much service. If the ulcer has already become gangrenous or mortified, poultices of scraped carrots, mixed with a portion of grated potatoes, are of great service. In these latter cases, also, *China*, given internally, is exceedingly beneficial.

Spasms. Convulsions.

What is usually understood by the term "spasms", or "convulsions", is an affection of the nervous system, which is manifested by involuntary and irregular motions of the muscles, attended for the most part with pain. The causes are numerous, and they are modified not only by the age of the patients, but also by the sex and constitution, in various ways.

Spasms are not always of such a character, that the laity can treat them judiciously; those only which have been suddenly brought on by injurious external influences may be entrusted to lay treatment. If they depend on protracted diseases, such, for instance, as irregularity of the menses, indurations, &c., they become too lingering and complicated for one uninstructed in medicine to undertake. The spasms are then a mere symptom of the primary disease, and they may indeed for the moment be mitigated and removed, but the radical cure must be left to the physician.

When spasms attain a high degree of violence, so that general rigidity of the whole body, loss of consciousness, loss of respiration, and symptoms of suffocation set in, the medicines given in ordinary cases must not be relied on, but the aid of a physician must be immediately obtained, for these symptoms in excess, especially in children and very sensitive subjects, may be fatal.

I shall give the most common symptoms of this complaint, and the appropriate treatment.

1. *Infancy* is, more than all other periods of life, liable to spasms, on account of the greater susceptibility of the nervous system. Even the most trifling influences, that would have no effect on grown persons, may induce spasms in infants; a mild attack of fever, worm affections, taking cold, pains in the bowels, fear, fright, &c. There are medicines peculiarly suited for children, and applicable in many of their diseases, to which I shall here chiefly confine myself.

Chamomilla is preferable in cases where the spasms arise from cold, colic, fever, vexation and anger, and the child is very restless; when one cheek is red, the other pale; where they lie

with half-shut eyes and without consciousness, have convulsive jerking of the arms and legs, turn the head from side to side, or whine, and desire drink continually. If the child refuses to take it, and it is feared the spasms would be increased by compulsion, or there be a difficulty in swallowing, merely smelling it will sometimes suffice. The repetition of the medicine is indicated, if after an hour or two there be a new attack.

Ignatia, 12th attenuation, is indicated when there is frequent flushes of heat of the whole body; sudden awaking from sleep in a fright, from which the child does not easily recover, with screaming, and trembling all over; spasmodic twitchings of single limbs and muscles.

Ipecacuanha will be serviceable if, with the spasmodic symptoms, there be shortness of breath, loathing of all food, but not of water; nausea, vomiting and diarrhœa. It may be repeated in two hours.

Opium, 3d attenuation, will mostly afford relief when the spasms are caused by fright and there is general trembling of the body, striking with the hands and feet, also loud involuntary cries.

Mercurius solubilis, 6th attenuation, will be useful if the spasms arise from worms, and if, with the convulsive symptoms of the limbs, there be distention and hardness of the abdomen, belching and eructations of watery substances, general heat and febrile disturbance, loss of consciousness, and general debility, especially after the convulsions have subsided.

Cina is likewise one of the best remedies in convulsions arising from worms.

Coffea, 3d attenuation, is of great benefit in spasms occurring in delicate, sickly children, without any assignable cause, and which are attended by no other symptoms. In cases of this kind, there is generally some latent cause for the disease, which is called into activity by the use of diet, too irritating for the nervous systems of children, and which cannot be remedied without the advice of a physician. Coffee, wine, chamomile and other teas, heavy articles of food, such as meal soup, black bread, and

the like, must on this account be excluded from the diet of children, while the medicines are being taken so that their peculiar action will not be injuriously disturbed.

2. *Females* very often suffer from spasms during menstruation, which are manifested by constrictive pains in the abdomen, convulsive movements of the limbs, or by twitching and jerking of the tendons. Many have at the same time the most severe constrictive bearing-down pains low in the abdomen, extending to the privates and thighs, which oblige them to bend themselves double, throw themselves on the floor with screams, raving delirium, and cold sweats.

Those who are not habituated to coffee as a drink, find it in cases of this kind one of the best remedies. It may be given in the 3d attenuation, three or four globules for a dose, on a drop on sugar, or in a teaspoonful of water.

But when coffee has been a customary beverage from youth up, and it may even be considered as an exciting cause of the disease; when at the same time there is chilliness, disposition to tears, and anxiety; the symptoms are most violent at night, and are milder in the day-time, *Pulsatilla* is the most serviceable remedy. Frequently also in such cases, *Chamomilla* in the 3d attenuation is beneficial, especially when there is much stretching of the limbs, jerking of the limbs, eye-lids, and tongue; dry and burning heat of the skin, with burning thirst; sweating of the forehead and hairy scalp; anxious, rapid and rattling respiration, and distention of the abdomen, accompanied by loose, greenish stools.

Cocculus, in the 12th attenuation, may be given with decided benefit in the most severe spasms of the abdomen, which come on irregularly, and often with very slight premonition, particularly when accompanied with frequent returns of sobbing; choking or constriction of the upper part of the throat, with restricted respiration and inclination to cough; anxiety; spasm of the chest; attacks of nausea, which bring on fainting and twitching of the limbs.

Ignatia, 6th attenuation, is indicated if the spasms come on

with nausea and fainting, confusion of ideas; general chilliness and paleness; great sensitiveness of the organs of sight, and hearing to light and noise, &c., which are intolerable; painful distention and hardness of the abdomen; twisting or rolling pain in the abdomen; painful pressure and drawing in the abdomen; increased warmth of the body, with frequent and full pulse, or intermitting pulse, at times full and strong, at others weak and small. In hysterical spasms of this kind, this is the principal remedy.

3. Symptoms of a convulsive character, occasioned by fright, attended by temporary loss of consciousness, dimness of sight, general trembling, diarrhœa, restricted respiration, and great prostration of strength, are mostly relieved by *Opium*, 3d attenuation.

4. Weakly, irritable men are at times affected with spasms, which come on with general relaxation and languor; trembling of the legs; coldness and general shivering; difficult respiration; constriction of the throat, and symptoms of suffocation; frequent yawning; hurried, weak, trembling pulse. *Camphor* is in cases of this kind particularly beneficial. As the action of this remedy is of short duration, it is best to let the patient smell the tincture from time to time until the symptoms entirely disappear.

Nux vomica, 12th attenuation, is most appropriate when the spasms are very violent, attended with loud complaints; cries and raving; abuse of the bystanders; and when the patient is of a hasty, passionate temper.

Those spasms, however, which occur in the male sex, and are owing to too great irritability of the nervous system, are only palliated by the last mentioned remedy; on this account, if the treatment is to be successful, it must be entrusted to a physician.

Not unfrequently do these spasms depend on excessive loss of semen (too frequent coition or onanism), in which case *China*, 6th attenuation, is the most suitable remedy, and will effect a complete cure, if the patient has so much self-command as to avoid these excesses of the sexual appetite. In such a case, however, it is necessary to repeat the dose several times every

other day, and at longer intervals as improvement is experienced. *Phosphoric acid* and *Staphysagria* are likewise valuable remedies in cases of this kind.

Sprains. Injuries by lifting, &c.

See also Bruises.

Sprains, as well as bruises, are dynamic injuries of the ligaments (joint bands) or of the muscles, without, or with so inconsiderable detriment to their integrity, as to require no mechanical aid, which indeed is very seldom called for. For if even some small filaments of a ligament be torn, this can neither be ascertained with certainty, nor, if ascertained, can they be united again by bandaging. The removal of the injury to the vital powers of the affected joint is all that can be done, and to this end it is only necessary to rest the limb, guard it against fresh distention, and to use internally the specific remedy—*Arnica;* which remedy excites in a healthy person, as has been proved, pain and swelling of the joints, very nearly resembling those arising from a sprain or dislocation, and consequently removes them in the patient. For this purpose a few globules of the 6th attenuation of this medicine may be taken, and repeated every three or four hours until better. In some cases of sprain, particularly those from lifting, *Rhus toxicod.* is also worthy of notice.

The patient should avoid using the sprained limb as long as there is any pain or want of firmness in it, without however being too careful of it, for when a limb is allowed to rest too long, it often takes on a sort of weakness, or stiffness and soreness which is not so readily got rid of.

Stomach, disordered.

Disordered stomach and diarrhœa are very often combined, the latter frequently depending on the former. I would advice the layman at the same time to refer to the article "Diarrhœa", because in such cases, where the symptoms of diarrhœa coincide with those of disordered stomach, and these with the symptoms of diarrhœa, he may readily form quite a new image of the disease, and at the same time find the remedy.

1. When this morbid condition of the stomach arises from general irritability of the nervous system, want of sleep, excessive mental labor; congestion of blood to the chest, and head; from a stroke on the stomach, or from heavy lifting with pain and weakness in the small of the back, and presents the following symptoms:

Vertigo; dull headache, particularly over the eyes; confusion and heat in the head; dryness of the tongue; offensive breath; bitter, sour or nauseous taste in the mouth; aversion to the smoke of tobacco, at other times agreeable; longing for sour things; yellowish coated tongue; belching; fulness at the pit of the stomach after eating; nausea; disposition to vomit; eructations; flatulency; feeling of heaviness in all the limbs; languor and feeling of discomfort; colic; distention of the abdomen; disagreeable feeling of warmth; weakness in the legs; restless sleep; frequent waking; starting up in sleep; frightful, heavy dreams.—*Arnica*, 3d attenuation, will generally be found serviceable. *Nux vomica*, or *Chamomilla*, will also frequently be appropriate.

2. Those complaints of the stomach, arising from a debauch; excessive use of wine and coffee, or partly also perhaps from taking cold, and which present the following symptoms:

Feeling as of fluctuation in the brain; vertigo; confusion of the head; soreness and heaviness in the back of the head; drawing pains in the teeth, at times in the upper, at others in the lower molars; ringing in the ears; heat in the face; isolated red pimples on the forehead, nose and corners of the mouth; white coated tongue; dryness of the mouth without thirst; collection of mucus in the mouth; heartburn; want of appetite; insipid taste of all kinds of food; nausea; collection of water in the mouth; vomiting; colicy pains in the abdomen; pressure in the stomach; tightness of the abdomen; sluggish stools; costiveness; restless sleep; disinclination to mental labor; general lassitude; drawing pains in the limbs; fretfulness; disposition to quarrel, and anxiety: are generally removed by *Nux vomica*, 12th attenuation.

3. If vexation, especially while eating and drinking has been the cause of the complaint, and there is heat and redness of the face; dull pain in the head; redness and burning of the eyes; general excitability of the nervous system; great irritability of temper, want of appetite; constant bitter taste in the mouth; bilious belchings; vomiting of green bilious matter; pain in the abdomen; debility; restless sleep, with tossing about and frequent waking,—*Chamomilla*, 3d attenuation, is generally the best remedy. But if chamomile tea has often been given in similar cases, and on that account leaves the disease unchanged, *Pulsatilla*, 12th attenuation, should be given, and if this should be insufficient, *Nux vomica*, 12th attenuation. In some cases, *Bryonia* may be beneficial, especially when chillines and costiveness accompany the symptoms above mentioned.

4. *Pulsatilla*, 12th attenuation, is most suitable in complaints arising from overloading the stomach with various kinds of incompatible substances, or from flatulent vegetables or fats, particularly of pork and mutton; sausages; rancid butter; pastry shortened with bad fat, &c., especially against the following symptoms:

Bitter, saltish taste in the mouth; a taste as from tainted meat, or like tallow; accumulation of mucus in the mouth; every thing tastes bitter; tobacco is quite tasteless; bread has a bitter taste; itching sensation in the throat; bilious belching; want of appetite; aversion to warm victuals; fulness in the stomach; distention of the abdomen; feeling of constriction under the ribs; rumbling and rolling in the abdomen, constipation, or slow, difficult and small stools; chilliness; weakness; drawings in the limbs as in ague; fretfulness, quiet vexation concerning the most trifling occurences; disinclination to conversation, and lassitude.

5. *China*, 6th attenuation, will have the preference against a peculiar morbid state of the stomach which comes on at the transition of winter into spring, and of autumn into winter, when there is continued wet, cold weather, in localities where the atmosphere is tainted with the effusion from standing water in ponds, &c., and in those persons who are obliged to labor in

such localities in a close room without the privilege of enjoying the fresh air, and at the same time are exceedingly liable to agues. The attending symptoms are mostly the following:

Indifference to eating and drinking; a feeling of satiety; retarded digestion, one feels that what has been eaten, has not been digested in the usual time; belching, distention of the abdomen; vomiting of undigested food; craving for something strong and stimulating; feeling of weakness and languor; disposition to lie down; dizziness and general sensation of heat; dulness of the head; dark urine with sediment; numbness of the limbs; great susceptibility to external impressions, such as air, &c.; the limbs are sore as if from excessive fatigue, the patient cannot let them remain quiet in one position, but is alternately bending and stretching them; stiffness of the limbs immediately after rising from bed; sleep disturbed and broken, or heavy and restlessness; melancholy, and ill-humor.

Disordered stomach arising from some particular error of diet, the symptoms of which does not differ materially from those already mentioned, will be relieved by the following remedies:

That which, as before mentioned, arises from fat of all kinds, especially pork, rancid butter, greasy pastry, is relieved by *Pulsatilla*, or if this does not suffice, by *Carbo vegetabilis*. If other kinds of food produce belchings, having the taste of what was eaten, with nausea, and disposition to vomit, *Antimonium crudum* is the chief remedy—also after drinking bad wine.—If the disease is brought on by taking coffee in too great quantity, *Nux vomica* is most appropriate, especially if there be headache, pain in the stomach, and toothache; *Chamomilla* when there is disposition to vomit, gagging and giddiness; *Ignatia* is sometimes suitable after *Chamomilla*.—If too free use of milk occasions flatulency and weakness, *Sulphuric acid* is the chief remedy.

Stomach, Cramp of the.

There is perhaps no form of disease, that occurs more frequently than this, and for which, particularly in the country, medical aid is so seldom sought, owing to the erroneous belief,

that cramp of the stomach is incurable, to which belief the often wholly useless treatment of the old school has given rise. So much the more acceptable, then, will it be to the layman, to be made acquainted with the practical treatment drawn from experience, which answers in most of the ordinary cases of this disease, and will enable him to recur to those remedies for diseases of this description, always keeping the law of similarity in view, which have been found most beneficial.

Nux vomica, 12th attenuation, is the most suitable remedy when the following symptoms, or even a part of them, are presented, viz.: contractive, pressive or pinching pain in the stomach, with the sensation as if the clothes were too tight, or as if there was flatulence confined in the left side under the ribs; this sensation, as well as the pain of the stomach, is generally increased after eating, and after drinking coffee, and accompanied also with a feeling of constriction of the chest, which often extends between the shoulders and into the small of the back, or giving rise also to a sensation as if a cord were drawn around the chest; these symptoms are mostly felt immediately on rising from bed, or they sometimes even wake the patient out of sleep. The following symptoms also frequently accompany the pain in the stomach: nausea, particularly at the commencement; collection of water in the mouth; eructations of a sour or bitter fluid with or without a sense of burning in the throat; palpitation of the heart, with anxiety, sour or nauseous taste in the mouth; costiveness; collection of wind in the abdomen; occasional pain in one side of the head; at times also a pressive pain in the forehead. It may be repeated every evening, or every other evening, or still more frequently if the pain be severe. This remedy is likewise especially applicable in those kinds of cramp of the stomach, which are brought on by the too free use of coffee; and also in those which commonly affect drunkards, appearing at first only in the form of vomiting; it is also suitable in the milder grade, that manifesting itself as *heartburn* only, which is a burning sensation in the stomach, with a sharp, acrid fluid rising up into the throat.

Chamomilla, 3d attenuation, is preferable in a very irritable state of the nervous system, and in persons naturally disposed to inward grief, especially when the patient complains of a sensation as if a stone were pressing heavily on the parts about the stomach, attended with painful flatulent distention of the pit of the stomach, and under the ribs of the left side, which the patient describes as a feeling as if the heart were being forced out. This pain is always accompanied by shortness of breath and anxiety, is mostly worst at night, causing great restlessness, anxiety and tossing about; at the same time there is frequently a throbbing pain on the top of the head, which obliges the patient to get out of bed, in the hope of obtaining relief. The sufferings are somewhat mitigated by rest and drawing together the upper parts of the body. It is also important to know that this kind of cramp of the stomach is mostly mitigated by drinking coffee, while that in which *Nux vomica* is beneficial, is aggravated thereby. On this account *Chamomilla* is often applicable for the cure of cramp of the stomach, occasioned by drinking coffee, or it will be the most suitable remedy to resort to in cramps of this kind, which *Nux vomica* alone is insufficient to remove. But if the disease be brought on by too free use of chamomile tea, *Chamomilla* will be of no service, but recourse must be had to *Ipecacuanha*, *Ignatia*, *Nux vomica*, *Pulsatilla*, or *Coffea cruda*, the last especially when the attacks of pain are almost insupportable, with great excitability of the nervous system.

If, on the contrary, the cramp is not entirely owing to the use of chamomile tea, but partly to that of coffee, *Nux vomica* will generally be the most suitable remedy, though in some particular cases it requires the aid of *Ignatia* or *Pulsatilla*, or both in succession.

Cocculus, 12th attenuation, is also indicated in cramp of the stomach, and is most appropriate when *Nux vomica*, apparently suitable, is inadequate alone to afford relief. It is best adapted to cramps resembling those in which *Nux vomica* is recommended, especially when there is hardened fæces or costiveness, or a pressing, constrictive pain extending over the whole ab-

domen, which is only mitigated by the discharge of flatulence, or when attended by nausea, and collection of water in the mouth. Commonly in these attacks the patient is fretful, reserved, and morose.

Ipecacuanha, 3d attenuation, is indicated in cramps of the stomach, accompanied by nausea and vomiting, with a dull pain in the pit of the stomach, and great soreness of the stomach. It may be repeated every three or four hours.

Belladonna is often serviceable in the most obstinate forms of cramp of the stomach, particularly when several of the forementioned remedies have been used without much benefit; likewise in nervous and irritable subjects who complain of a gnawing, pinching or constrictive pain in the pit of the stomach, or in the region of the stomach, which is alleviated by bending the body backwards, or by holding the breath. The pain is at times so violent as to cause temporary loss of memory, and even fainting; the attacks of pain often return regularly while dining.

Bryonia is chiefly beneficial when the cramp consists of a pressure, as if from a stone, at the pit of the stomach, which is felt especially when eating, or immediately after, with a feeling of fulness about the stomach; also against constrictive, pinching and cutting pains, which are relieved by pressing on the region of the stomach, or after belching; or when the pains are aggravated by motion, walking, &c., every misstep occasioning stitches in the stomach; likewise when there is costiveness, pressing or constrictive pains in different parts of the head, which are mitigated by external pressure.

Cramps of the stomach attended by nausea and vomiting, with stitches and soreness in the stomach, requires at first such remedies as are known to be beneficial in such cases; the principal are: *Ipecacuanha*, *Nux vomica*, and *Pulsatilla*.

Besides the varieties of cramp here mentioned, there are numerous others which the remedies pointed out above will not remove; but require for their cure quite different medicines, which however cannot properly be given into the hands of the

laity, since for their proper application a nice discrimination and individualization of each case is required, which is only attainable by a competent physician.

SUMMER COMPLAINT.

See Cholera infantum.

Sun-stroke. Coup de soleil.

Serious results are often produced by exposure to the sun in the heat of summer; especially in tropical climates. Among the most common of these are sudden and intense inflammation of the brain, apoplexy, erysipelas, &c.

The best remedies in cases of this kind are:

Aconite, when there is full, bounding and frequent pulse, with hot and dry skin, thirst, violent, acute pains in the head, &c., indicating inflammatory action of a high grade.

Belladonna, after *Aconite*, if the latter be insufficient to remove the effects of sun-stroke, or in alternation with it, especially if there be violent throbbing pain in the head, particularly over the eyes, with a feeling of fulness and expansive pressure as if every thing were about to protrude through the forehead, aggravated by stooping, the slightest movement or noise, and by mental emotions; great anguish, restlessness, or rage and violent delirium.

Camphor, by olfaction, or internally a drop of the spirits on sugar, is likewise beneficial in sun-stroke, especially after *Aconite* and *Belladonna* have been used ineffectually.

Ipecacuanha will be useful in subduing any gastric symptoms which may arise.

In some inveterate cases it may also be necessary to have recourse to *Lachesis*, *Opium*, or *Carbo vegetabilis*.

The remedies may be repeated every one to four or six hours according to the severity of the symptoms.

T.

Tapeworm.

The symptoms by which worms in general, and particularly the tapeworm, may be known, manifest themselves first of all

chiefly in the lower intestines or abdomen, which is hard and distended. The patient complains of acute colicy pains, rolling and rumbling in the bowels, collection of water in the mouth, nausea, vomiting, and sometimes voracious appetite which is soon satisfied. The presence of the tapeworm is difficult to determine, unless some pieces of it are discovered in the stools.

The particular symptoms of the presence of this worm are: undulatory motions in the bowels, causing the patient the sensation, as if something was drawing itself together in the intestines, and lay there in a lump; also vertigo, a peculiar feeling of the patient resembling intoxication, and crawling and itching in the hands and feet.—The length of these worms is various, they may be fifteen, twenty, thirty feet, and over. The color is generally whitish. The head is elongated, with two lateral impressions or grooves. The interval between the head and neck is in most cases marked by a furrow; the neck itself is often several feet in length and thread-like, before it terminates in the so-called body of the worm, which is much broader. The joints of which this worm is formed are throughout broader than long.

Homœopathy from experience teaches that the tapeworm can only exist in a diseased alimentary canal, and disappears of itself when this is restored to a healthy state; for the worm does not live immediately in the bowels, but in the refuse of the food, the excrement, which is its most agreeable residence as long as it is nourished there; and it irritates the insides of the intestines, and becomes troublesome only when by disease of the patient their contents are altered, and the worm also becomes in some measure sick; just as the child in the womb is restless, when the mother is diseased.

In very many cases, the complaints brought on by this worm are removed by several doses, repeated daily, of *Tinctura filicis maris* (tincture of male fern), particularly when besides the usual paleness of the face, with blueness about the eyes, there are pains in the region of the navel and in the back, and periodical headache.—Besides this remedy, and when repeated doses of it are ineffectual, the following are of service:

Sabina, in contractive, pressive headache, extending from the forehead to the nape of the neck, also when no previous disorder of the abdomen is present, but the presence of the tapeworm is already discovered by the evacuation of pieces.

Sabadilla, in burning, boring, and almost intolerable pains in the abdomen; headache in the forehead and temples; collection of saliva in the mouth; constant chilliness; great sensitiveness to cold; singular ideas in regard to his own abdomen, which seems as if it were fallen in, or his stomach eaten up, &c.

Valeriana, in great excitability of the nervous system; dulness of hearing and dimness of vision; loss of smell; nausea and fainting fits; fearfulness.—If all these means are fruitless, the administration of *Mercurius solubilis*, alternated with *Sulphur*, will often be of use.

A very good popular remedy is for the patient to take for eight days, successively, early in the morning, a tablespoonful of pure olive oil, and an hour afterwards drink half a glass of Cyprus wine.—But should this also be found ineffectual, the case had better, without making further trials, be committed to an experienced physician.

Teething of Children.

Teething in children is seldom unattended by suffering of some kind. Often very dangerous symptoms take place, for which the physician must be called in. In the milder cases, on the contrary, the directions here given, may be of use. But first, however, I shall make a few remarks on the natural process of teething.

The first dentition usually commences at the end of the sixth, or in the course of the seventh month, when the middle pair of incisors or cutting teeth above and below appear; the outer pairs of incisors show themselves in the eigth month; the first double teeth towards the end of the first year, the eye and stomach teeth in the beginning of the second year; lastly the second double teeth or grinders about the end of the second year. The

corresponding teeth on both sides mostly come together, but those of the lower jaw usually first. The eye teeth often occasion the most sickness. At the first appearance of a tooth, the edge of the jaw, where it is about to project, becomes gradually broader, and at the same time angular and sensitive. The mouth is usually hot, but not much swollen, and the gum is whitish, particularly at the margins, as if a tooth were shining through. The child is restless, particularly at night; has flushes of heat, alternating with paleness; constantly carries the hand and every thing to the mouth, likes to have his gums rubbed, bites hard on the nipple, or cannot suck, but soon lets go the breast again. This condition continues with more or less severity for several weeks, until the teeth are really about to make their appearance, when the gum gradually swells, and becomes hot and painful; the pain, however, is not always alike severe, though at times it suddenly becomes very violent; the child slavers, the saliva runs from the mouth copiously, and is often acrid and makes the mouth sore.

Against these natural concomitants of teething, nothing is required; only in cases of very high excitement, and in the most violent attacks, where the children are exceedingly cross and fretful, and cannot be quieted or put to sleep in any way, two or three globules of *Coffea*, 3d attenuation, may be given, if the mother and child have not been used to coffee as a drink—in which case relief is more likely to follow a small dose of *Aconite* or *Chamomilla*.

In cases where long continued costiveness is an accompaniment of difficult dentition, *Nux vomica*, 12th attenuation, is generally the best remedy. If, on the contrary, diarrhœa be an accompaniment, nothing need be done, unless it become too violent.

Many children, while teething, are subject to a dry, asthmatic cough, which mostly yields to a few doses of *Chamomilla*, 3d attenuation. *Chamomilla* is one of the most valuable remedies in diseases of children, during dentition, even when attended with slight twitchings, provided it has not previously, as is often the case, been made use of as tea or lavement.

Belladonna may often follow *Chamomilla* with advantage, when the latter has been insufficient, especially when the child is exceedingly restless, particularly at night, with tossing about, burning heat over the whole body, and a great deal of thirst; redness of the skin; trembling of the limbs; anxiety; groaning; sighing; short, hurried, noisy respiration and visible constriction of the chest; redness of the eyes; sudden and repeated starts with crying out, and twitchings of the limbs.

If spasms occur during dentition, repeated doses of *Ignatia amara*, in the highest attenuations, will be found beneficial; it may be given at first a globule every quarter of an hour, and less frequently as the spasms abate.

Toothache. Odontalgia.

1. *From decayed teeth.*

Chamomilla, 3d attenuation, is indicated against: gnawing pain, as if a nerve were being scraped; grumbling, tearing or drawing pain; swelling of the gums; sensation as if the teeth were too long; looseness of the teeth; intermitting attacks, which are most violent at night when warm in bed, preventing sleep; swelling of the cheek; aggravation or renewal of pain by eating or drinking anything warm or cold.

The most violent pains may often be removed by mesmerism, by applying the thumbs externally to the cheek over the aching teeth, or by pressing a finger on the tooth itself. As soon as the pain begins to increase, the application must be discontinued, and relief will follow in a short time.

Coffea, 3d attenuation, will relieve the most violent pains in persons who are not accustomed to drinking coffee as a beverage, even when the sufferers are almost distracted from pain, with weeping, trembling, &c.

The north pole of the *magnet* will afford relief against: pains, as if the tooth would be torn out; throbbing and pressing pains in the hollow teeth; burning in the gums; redness and swelling of the teeth; the pains are aggravated by eating and drinking, and relieved by walking about.

Likewise in toothache which attacks all the hollow teeth at the same time, the gums of which are swollen and painful to the touch; jerking pains in the periosteum, at times consisting of a quick drawing pressure, at others, of a boring, tearing, or burning, sticking pain; and pain in the incisors on inspiration.

Mercurius solubilis, 6th attenuation, is most useful in tearing pains in several teeth next the decayed ones, which extends to the ear, and is worse at night; severe shooting pain in the teeth; swelling of the gums, and profuse flow of saliva, with a feeling, as if the teeth were loose.

2. *From cold.*

Chamomilla, 3d attenuation, when there is: shooting, boring, throbbing or jumping pain in all the teeth, especially at night, and which seem to be elongated; the pain extends along the jaw to the ear, and along the temple towards the eye; drawing and tearing pain in the teeth indiscriminately, in the whole row; swelling of the gums and cheeks; heat and redness of the cheeks; general weakness, particularly of the joints; glands under the chin painful and swollen; fretfulness and disposition to shed tears.

Rhus toxicod., 12th attenuation, when there are: violent jerking or dragging pains, as if the tooth would be torn out; throbbing and tearing in all the teeth, extending to the bones of the jaw and temples; painful sensation as if the teeth were hollow and too long, and admitted the air; swelling of the gums; the pains come on or are worse in the open air, or at night, when they are often almost unendurable; external warmth affords relief; the teeth become loose and the carious ones have a very offensive odor.

3. *From congestion of blood.*

Pulsatilla, 12th attenuation, when there are: acute throbbing pains, aggravated by cold water, and by the warmth of the bed, or in a warm room; jerking or tearing pain, as if the teeth were being pushed out; the pains are worse in the evening, coming on with chilliness, and gradually disappear after midnight.

Hyoscyamus, 6th attenuation, is serviceable, especially in toothache caused by cold air, with congestion of blood to the interior of the head, and looseness of the teeth; a sort of buzzing pain in the tooth; sensation when chewing, as if it were falling out; tearing or raging pain even in the gum.

China, 6th attenuation, against throbbing pain; feeling of numbness in the teeth; boring pain with swelling of the veins of the forehead and hands; swelling of the gum; dryness in the mouth and thirst; intermitting attacks of pain; sleeplessness; the pain comes on or is aggravated after eating, or at night, or by the slightest touch, and in the open air; and is relieved by pressing the teeth firmly together.

Aconite, is chiefly serviceable in cases where the patient is almost distracted with pain, and where *Coffea* cannot be given, because it is the daily drink; especially in throbbing toothache, occasioned by taking cold; with congestion of blood to the head, and burning heat in the face.

Chamomilla is applicable when there is reason to believe that coffee is the cause of the toothache, as it comes on soon after drinking it, and is attended with general excitement of the venous system,—followed by *Nux vomica*, 12th attenuation, which is particularly suited to persons of an active choleric temperament, as well as those who drink much wine, brandy and coffee, and lead a sedentary life.

4. *From general increased sensibility of the nervous system.*

Hyoscyamus, 6th attenuation, against tearing pain in the gums, particularly on the admission of cold air into the mouth; drawing pain in separate teeth, changing from one to another; attacks of toothache with general flushes of heat; twitching of the tendons of fingers and arms; disposition to convulsions, or actual convulsions; tearing pains extending even to the forehead.

Nux vomica will be serviceable in numb or dull pains, and also, at times, in tearing pains in the teeth and jaws, which, commencing in a hollow tooth, often extends over the whole of the affected side; and is mitigated by warmth, and excited not

so much by cold air, as by cold drinks, which at once affect it. This remedy is also suitable when there is drawing or boring pain in a hollow tooth, with the sensation as if the tooth would be torn out; severe shooting or jumping pains in the tooth, which affect the whole body, with painful swelling and suppuration of the gums; at times also a sensation as if the teeth were coming out of their sockets and were too long. This kind of toothache commonly comes on early in the morning, is aggravated by chewing, is also mostly renewed and aggravated on opening the mouth in the open air, and by excessive mental labor.

U.

Ulcers on the extremities, &c.

These troublesome sores are found most commonly in persons whose business requires much standing; in females who during gestation have suffered much from varices (knots on the veins); in subjects who suffer from maltreated itch, and those who have suffered from tetter for a long time. Usually, sores of this kind are found about the leg and ankle; they often acquire great extent, become deep, with hard, thick, puffed edges, a dirty appearance, and secrete an offensive, foul ichor or pus.

The remedies most commonly resorted too are: *Hepar sulphur.*, 6th attenuation, and *Tinctura sulphur.*, repeated every three or four days, and at times also given in alternation.—In cases attended by severe burning pain, *Arsenicum* is the best remedy, or *Carbo vegetabilis*, when the ulcers bleed easily and have a bad odor with burning pain, followed again, after five or six days, by a dose of *Sulphur.*

Urinary Complaints.

Nocturnal urination or wetting the bed is a complaint of frequent occurrence with children, and is exceedingly troublesome to parents.

It is generally the result of disease or constitutional weakness,

though in some cases it may arise from indulgence in bad habits or inattention to cleanliness.

The remedies in general most useful in this complaint are: *Pulsatilla*, *Sepia*, *Silicea*, and *Natrum muriaticum*, one or more of which will mostly effect a cure.

Retention, or painful emission of urine, is occasionally met with in females after delivery, especially in first confinements and in protracted and difficult labors. Aged persons are likewise often troubled with complaints of this kind.

The following are the most serviceable remedies in general: *Arnica*, *Pulsatilla*, *Belladonna*, and *Nux vomica*.

Retention when met with in young infants should be attended to at once; usually a dose or two of *Aconite*, or, if this should be unsuccessful, *Pulsatilla* will relieve it. Two pellets may be given as a dose.

The remedies mostly effectual in *incontinence* of urine, or partial, or complete inability to retain, are: *Belladonna*, *Cantharides*, *China*, *Pulsatilla*, and *Stramonium*.

V.

Vaccination.

The experience of the last fifty years has demonstrated the utility of vaccination in preventing and modifying small-pox (variola). Previous to its introduction the latter disease was the terror of all nations, both on account of its loathsomeness and its virulence, often decimating towns and cities, and even destroying whole tribes of savages, among whom it was not unfrequently introduced by unprincipled persons by innoculation. At the present time, however, the small-pox is deprived of most of its terrors, and malignant and fatal cases are of comparatively rare occurrence.

The vaccine virus is obtained from the cow, on the teats of which animals vesicles are occasionally met with of a bluish appearance which, if not molested, go on to suppuration. It was

from the knowledge of the fact, that in certain agricultural districts in England milkmaids who had been affected with the vaccine disease, contracted from the cow, were not attacked by small-pox when exposed to it, that Jenner was led to make the experiments in regard to the protective powers of vaccine, which have immortalized himself, and conferred incalculable blessings on mankind.

The vaccine disease is similar in its effects to small-pox, and therefore acts homœopathically as a preventive. About the third day after the insertion of the matter a small red pimple appears in the skin, which gradually increases in size, and a vesicle forms which is at first filled with a serous fluid; this fluid by degrees becomes more consistent and assumes a yellowish colour, and by the eighth day the inflammation is at its height, when it presents a deep red circular and swollen areola about the size, generally, of a quarter of a dollar, the centre of which is filled with yellowish matter.

There is at times considerable symptomatic fever and swelling of the glands of the arm-pits. From the ninth day the inflammation, and swelling gradually subside, and a scab is formed which falls off the latter part of the second, or during the third week from the time of vaccination.

The most suitable age to vaccinate infants is perhaps from the fourth to the sixth month, and the best seasons the spring or autumn. It may, however, be performed at any age, and when the small-pox is prevailing epidemically, all persons of whatever age who are not protected should be at once vaccinated.

The virus should be obtained from a healthy child, one if possible that is free from constitutional taint, especially chronic eruptions, and the parents of which are also healthy.

The symptomatic fever, and consequent irritability attending the inflammation when at its height, and which is at times of a pretty high grade, may be allayed by a dose or two of *Aconite*.

A few doses of *Sulphur* will generally remove any tendency to eruptions which may be manifested after the vaccination.

VARIOLA.

See Small-pox.

Varioloid.

Varioloid is merely a modified form of small-pox, occurring in persons partially protected by vaccination, or by some peculiarity of constitution. Individuals who have not been vaccinated for a number of years, when exposed to small-pox, are often liable to have it in the modified form. The period of incubation, as it is called, or the time that elapses between the exposure to the contagion and its external manifestation, is about the same as that of small-pox—namely 12–14 days. But the accompanying fever is less violent, and the course of the disease shorter and much less violent. Frequently, indeed, there are but a few scattered pustules over the body, which fill with straw-colored or yellowish matter, dry up in a few days, and the scabs fall off, leaving scarcely any cicatrix.

There are usually no permanent pits remaining after varioloid.

Light cases of varioloid require very little medicine; in the beginning, a dose or two of *Aconite* may be necessary to allay the febrile irritation, followed in a few day by *Rhus toxicodendron*, or *Sulphur* to accelerate the maturation of the pustules and dessication. The latter remedy is also useful in relieving the itching which is at times troublesome during the dessication.

In severe cases the treatment will not differ materially from that recommended under small-pox (which see).

The diet should in this disease, generally consist of light nutritious non-medicinal articles; and the apartment of the sick be kept at a moderate temperature, rather cool, and well aired.

Varicose Veins. Knots on the Veins.

These are elevated tumors, generally without pain, and yielding upon pressure, caused by the gradual distention of a vein. They are at first of a small size, but gradually become larger, and assume a reddish, blue or dark appearance. They diminish in size in the horizontal posture, and increases by standing and

when the limbs hang down. These tumors are often found in great numbers, and chiefly on the lower extremities; they are common during gestation, and also in men whose business requires much standing. As long as the tumors are small, they give no trouble; but when large, they give rise to an intolerable itching and occasional pain, and inflammation, and sometimes the veins burst.

That bandaging the limb lightly, and washing with cold water, rye-whiskey, rum, &c., as outward mechanical means, are not without benefit, I am not disposed to deny. But the internal administration of *Arnica* and *Pulsatilla*, day about, with keeping quiet, avoiding much standing (where possible), and proper attention to diet, are of more utility. If after some weeks there is no manifest change for the better, *Tinctura sulph.* and *Lycopodium* may be given in alternation every fourth day. The complete cure of tumors of this kind is often beyond the reach of medicine.

VERTIGO.

See Giddiness.

Vomiting.

1. *From vitiated stomach.*

The symptoms are: debility; heaviness and drawing, or pain, in the head and limbs; a feeling in the stomach as if the food would have to be thrown up again, with an unpleasant taste in the mouth; depraved appetite; offensive eructations, as if from spoiled food; tenderness; nausea; pressure and fulness in the region of the stomach, especially after eating; vomiting of food, with general chilliness; change of complexion; restlessness; lowness of spirits, with cold hands and feet.

If these symptoms are the result of overloading the stomach, abstinence will be the best cure; that is, the patient should take only a little weak soup, or gruel, instead of the usual meal, and after a time a few mouthfuls of black coffee, which will be especially serviceable when there is a constant disposition to vomit, without real vomiting taking place.

But if the depraved stomach be the result of eating fat meat, such as pork, or other fat substances whereby a rancid taste and belching is produced, it is necessary to enjoin on the patient moderation in eating and drinking, and to give him *Pulsatilla*, 12th attenuation, which in a short time will bring about the wished for restoration.

If this medicine do not answer to carry off the vitiated contents of the stomach, or there remains, after a full clearing out, a constant loathing, nausea and inclination to vomit; *Antimonium crudum* will in most cases remove them, especially when the vitiation of stomach is brought on by night revelling, excesses in wine or coffee, and afterwards exposure to cold.

When the following symptoms are present: dryness of the mouth without thirst; white coated tongue, with much mucus in the mouth; heartburn; bad taste; collection of water in the mouth; vomiting; pressure at the stomach; distention of the abdomen; costiveness; vertigo and heaviness in the head; lassitude; indisposition for thinking; restless, fretful, quarrelsome temper; *Nux vomica*, 12th attenuation, will be most appropriate, of which a dose may be given every six or eight hours. *Antimonium crudum* is also particularly suitable whenever the patient has nausea and inclination to vomit; the tongue much coated and blistered; frequent belchings; much thirst, chiefly at night; vomiting of slime and bile; pain in the stomach, as if it were too full; the stomach painful to the touch; much flatulency, and mostly loose stools.

Ipecacuanha is indicated when there are: accumulation of mucus and weakness of the stomach; constant nausea; vomiting, and tongue but slightly coated; every thing disgusts the patient, even tobacco; diarrhœa. It may be repeated every three hours.

2. *From mental emotions.*

When vomiting or depraved stomach has been chiefly occasioned by vexation or anger, and the following morbid symptoms are present: bitter taste in the mouth, bitter, bilious eructations; vomiting of green, bilious fluid which has a bitter taste, and

leaves, after swallowing, a scraping, unpleasant feeling in the throat; pressive pain in the stomach; general debility; entire loss of appetite; the stomach seems quite full, and to press the heart out of place; flushed face; great thirst; giddiness with one-sided drawing pain in the head, or feeling of pressure and weight combined; anxiety; restlessness (a sort of acute bilious fever); *Chamomilla*, in the 3d attenuation, will be the most suitable remedy.

But if, together with these symptoms, there be chilliness and coldness of the body; costiveness, and constant thirst, the vexation still continuing, *Bryonia*, 6th attenuation, is most suitable.

If the disordered stomach arise from fright and anger combined, *Aconite* is the chief remedy, which in a few hours will generally remove every trace of indisposition.

Continued grief and solicitude also readily occasion vitiated stomach, which is removed most speedily and effectually by a few doses of *Ignatia amara*, 6th attenuation, given at intervals of six or eight hours.

3. *From worms.*

Eructations of a rancid taste; frequent nausea, which at times passes off suddenly, at others remains, and is attended with severe twisting or winding pains in the abdomen, and disposition to vomit; together with fainting fits, pale face, colorless lips, and general coldness; vomiting chiefly at night; warm risings in the chest, and difficult breathing, require *Valeriana* in the 3d attenuation, and occasionally also *China*, 6th attenuation.

Vomiting from worms will not be permanently relieved by *Valeriana*, if there be general ill-health, indicating a great number of intestinal worms. And therefore the treatment must be committed to a physician.

4. When young children are *over-fed*, or nourished with heavy, indigestible food, when they are rocked too much; dressed too tightly; have injections too often given them, or their stomachs injured by frequent evacuants, giving rise to vomiting in which all the food is thrown up, soon after it has been eaten, producing

emaciation and debility. At times there is also costiveness, or diarrhœa, which more distinctly mark the disease.

In such cases it is always serviceable to give one or two doses of *Ipecacuanha*, 3d attenuation, and then to apply the remedies best adapted to the whole of the symptoms, for instance, where costiveness is present, *Nux vomica* is generally best, 12th attenuation, or, where diarrhœa prevails, attended with cutting pains, *Chamomilla*, 3d attenuation. These remedies may be repeated on a return of the symptoms. *Pulsatilla*, 12th, is also often of great service in cases accompanied by diarrhœa; *China*, 6th, is indicated when the sufferings are brought on by the frequent use of purgative medicines, or at least have been aggravated by them.

5. *From morbid irritability of stomach in persons who are predisposed to cramps and nervous fits.*

Vomiting of white, tough slime, with vertigo; ability to take but little on the stomach at a time; the slightest excess excites vomiting, cramps, and cutting pains in the abdomen; loseness of the bowels, and in very delicate persons fainting, and general weakness in the limbs. *Pulsatilla* is one of the best remedies in this form of the disease; in many cases also, *Cocculus*, 12th attenuation, in tincture or globules, is very serviceable.

W.

Walk, Children learning to.

Not unfrequently do children learn with difficulty to walk. It is not so remarkable when delicate, weak, poorly fed children, make no serious attempt to walk during the second year of their age; but when this occurs in those who are well fed and strong, muscular and nervous weakness is to be apprehended. In both cases the timely attention of parents, or relatives is desirable.

In the first case little advantage is to be expected from medicines, if strict attention be not paid to diet; the use of the following articles should especially be prohibited: meal-soups, sucking

bags, black bread, coffee, chamomile-tea, sleeping in feather-beds, or being kept in chambers too warm, and from the free air, &c. Milk is the best drink; light broth with wheat bread, gruel, farina, and sago the best food. Next to proper attention to diet, daily lukewarm baths, in which twice a week a decoction of malt is put, is highly to be recommended. After continuing this treatment for some weeks, the following medicines may be administered; though in the second case mentioned they may be commenced with at once. *Belladonna* and *Causticum*, of which alternate doses are to be given every fourth day. If, after three or four weeks, no improvement is manifested, let *Sulphur* and *Calcarea* be substituted and alternated in the same way, as directed for the first two.

Warts and Corns.

These excrescences on the hands, which are sometimes larger, sometimes smaller, isolated, and mostly without pain, are seldom found worthy of notice, and often disappear of themselves so suddenly, that their possessor cannot say how he got clear of them. If, however, they make their appearance in great numbers, varying in size from that of a pin's head to a bean, and are consequently troublesome and disfiguring, their extirpation is particularly desirable, especially by the female sex. In such cases a dose of *Lycopodium*, 18th attenuation, every five or six days, until six or eight doses are taken, will often cause their removal; or where this remedy is of itself insufficient it may be frequently advantageously alternated with *Calcarea carbonica* in the same attenuation.

Corns, excrescences mostly found on the feet, which are at times exceedingly painful and troublesome, are generally produced by wearing tight shoes' or boots'. Though this is not always the case. In many persons there seems to be a constitutional predisposition to them.

The remedies recommended above against warts will often be found beneficial in corns, and they may be administered in the same way.

Relief may always be had by paring the corns closely, and then bathing them with *Tincture of Arnica.* The *Tincture of Sanguinaria canadensis* (blood-root) has also been highly recommended for the eradication of corns, applied topically to the corns individually.

Weaning.

Generally the most suitable age to wean children is when they are about eighteen months old; by the time they arrive at this age, the teeth are usually sufficiently developed to masticate more solid food, and the milk of the mother may be dispensed with.

If the mother be delicate, the supply of milk begins to diminish in quantity and deteriorate in quality, or the menstrual discharge reappears, the child may be weaned at an earlier period.

On the other hand, the child should not be weaned while it is suffering much from the irritation of teething, or any other infantile disease, unless the health of the mother renders it absolutely necessary.

As the teeth begin to appear the child should gradually be accustomed to other food than the mother's milk, so that, when the period for weaning arrives, its digestive organs will be fully prepared for the change of diet.

The most suitable seasons of the year for weaning are the spring and autumn.

After weaning, the child's diet should consist of simple but nourishing food, such as bread and milk, arrow-root, farina, &c. and the transition to a more substantial fare should be extremely gradual.

The mother, also, after the child is taken from the breast, should be particularly careful in her diet, and until the secretion of milk has ceased, live as low as possible. If the breasts become much distended and painful, they should be bathed with hot lard, and wrapped in raw cotton. It will also be necessary to have them drawn occasionally. At the same time the internal administration of *Pulsatilla* and *Rhus toxicodendron* will aid materially in stopping the secretion. They may be taken alternately twice a day.

Wen.

This affection, called also *encysted tumor*, is formed in the cellular texture of the skin, and enclosed in a special membrane, in the cavity of which the secretion of a peculiar matter takes place.—Tumors of this kind are always small in the beginning, and develope themselves slowly to a greater compass. Their form is invariably round and well defined, and they are mostly moveable in all directions; generally they are free of pain.

On account of the little inconvenience these tumors occasion (unless they exist in great number), they often attain a large size, or become ill-conditioned, before much attention is given to their removal; and when at last this becomes desirable, excision is thought to be the only remedy, and is generally resorted to. I have therefore thought it best to make the laity acquainted with a remedy which, with proper attention to diet, in very few instances will be without benefit; and in no case will the employment of this remedy be injurious to the general state of health, even if it have no special effect on the morbid structure.

I have treated a great number of such tumors, and used several homœopathic remedies, but from none have I witnessed the beneficial results which I have obtained from *Calcarea carbonica*, whether given in the higher or lower attenuations—in one or more doses; it has always had the same good effect, and sometimes dissipated these tumors in the space of six or eight weeks.

Womb, falling of the. Prolapsus Uteri.

This disorder is of very frequent occurrence in females. The chief symptoms are: sensation of bearing-down or dragging about the groins; pain in the back and loins; feeling of pressure low-down in the pelvis; sense of numbness extending down the limbs, and sometimes frequent desire to pass water; nervous debility, faintness, &c.

Causes. A relaxed state of the system, either natural, or a

consequence of sedentary habits; indulgence in stimulating food and drinks, &c., may predispose to prolapsus of the womb. Difficult labors, or getting up too soon after confinement, severe and long continued coughs; falls; injuries from overlifting; tight lacing; violent vomiting, and numerous other causes might be mentioned as immediate causes of the disorder.

The medicines most efficacious in the treatment of prolapsus are: *Nux vomica*, *Sepia*, *Belladonna*, *Aurum*, and *Calcarea carbonica*.

A few doses of *Nux vomica* taken once a day, in the commencement of the complaint, will often remove it. Should it however fail, or should the displacement have existed for some time, one or more of the other remedies mentioned may be required.

They may be administered, one at a time, in the order named, once a day for five or six days, and then discontinued. If amelioration follow the use of one of them, nothing more should be given until it cease, when the same medicine may be repeated.

If the disease be produced by a fall, overlifting, or external violence of any kind, *Arnica* will be the remedy most likely to afford relief.

Worms. Helminthiasis.

Many complaints are ascribed to worms which arise from very different causes. When children have been fed upon pap, cakes and similar articles of a hurtful nature, or when the mother, whilst nursing, overloads her stomach with meat, fish or salted and fatty articles, particularly with pies, the children must necessarily become sick in consequence, or a predisposition to sickness be induced. When, besides this, the children are dosed with vermifuges, injections, purgatives, &c., the worms cannot fail to prosper and increase.

When children are supposed to have worms, the first thing to be looked to, is a rational mode of living, by which means the worms will soon diminish; and if symptoms of the complaint remain, the remedies will afterwards prove the more effective.

Most persons are by far too much afraid of these little animals, which are not nearly as noxious as the remedies usually prescribed for them, especially the nostrums puffed in the newspapers. Goodnatured persons believe these things, and pay for the trash, when, if they knew what they or their children were swallowing, they would rather pay twice as much to keep it out of the house, to say nothing of their bodies.

It is true, these things sometimes kill the worms; but too frequently they kill the children also, or affect the abdomen in such a manner that the consequences appear many years after. First, it should be considered that all children have worms, sometimes before they are born, and that it is frequently a premonitory sign of a dangerous disease when these worms pass off themselves; secondly, that what these worms subsist upon in the body is more hurtful than the worms themselves. Almost all the symptoms attributed to worms may arise from some general disease of the system, which has a tendency to increase them, especially if aided by an unwise mode of living. When the worms have become very numerous, they give rise to various complaints which, joined to the symptoms of the original malady, sometimes become dangerous. When the worms are expelled, the symptoms which they gave rise to, of course disappear, but the real disease may increase.

Sometimes diseases subsequently make their appearance which are worse than the first, although slower in their operation, perhaps not manifesting themselves until the tenth or twelfth year. The expulsion of the worms is of no essential use. The remedies here prescribed will frequently cure the disease itself; and if there are really too many worms, which is rarely the case, will remove them also. Children who have worms should have enough to eat, but not too much bread, and few or no cakes or pies, but in preference a good deal of ripe, cooked, or dried fruits, and, in particular, carrots.

When you are not certain of the existence of worms, and the child becomes emaciated, and vomits frequently, give first *Ipecacuanha;* or, if the tongue is coated, *Carbo vegetabilis;* and

if this has no effect, *Pulsatilla;* if the child has been much troubled with diarrhœa, or has taken much aperient medicine, give *China;* and when the bowels are constipated, *Nux vomica.*

When the child passes worms occasionally, picks its nose frequently, and the belly is much distended, give *Cina,* which is one of the chief remedies for all complaints really arising from worms.

For colic, caused by worms, with frequent inclination to vomit, when much water collects in the mouth, and the parts around the navel are hard; also when the whole abdomen is hard and distended, with frequent ineffectual straining to evacuate, or secretion of nothing but slime, give at first *Aconite,* some hours later, *Cina;* and if this be not sufficient, *Mercurius vivus* or *Silicea.* In all complaints caused by worms, *Aconite* is of great use in the beginning, and if this and the other remedies mentioned above do not remove them, *Sulphur* should be given, and will be found to be of great value, particularly after *Mercurius vivus.* These remedies will generally effect a cure. In rare cases attented with much thirst, sudden starting, and fright, *Belladonna* may be required. In very bad cases it may also be necessary to give a dose or two of *Lachesis.*

For the most suitable remedies in *ascarides,* the small worms seated in the anus, see "Anus, itching of the". And for those appropriate in *tapeworm,* see that article.

Wounds.

These mechanical injuries cannot be properly treated of here, as they invariably require mechanical aid; nevertheless homœopathy can do much to promote their more speedy and permanent cure. Nature heals the wounds, as soon as art has made the requisite applications; hence it is, above all, important that they should be properly dressed. Though this consists merely in cleansing the wound, stopping the blood, bringing the edges of the wound together, and keeping them in apposition by a simple adhesive plaster, or bandages. Where this treatment is found to be insufficient, the wound being too large, and the blood cannot

be stopped by this means, the aid of a surgeon is indispensable, who will probably find ligatures and sutures necessary. The bandage ought to be of a suitable width, neither too narrow nor too broad, neither should it be too warm; it must not be taken off and renewed daily, unless in case of necessity, but must be left on until the lips of the wound are so firmly united, that there is no danger of a fresh separation.

All salves or other plasters, except the adhesive plaster, must be discarded, otherwise the skin, already unusually sensitive by inflammation, will become irritated, and give rise to suppuration.

As in contusions and sprains, it is also important here to prevent traumatic fever, and to accelerate the process of healing, to give *Arnica*, 6th attenuation, internally. Which remedy is almost specific in these cases, and when timely administered, it will seldom be necessary to have recourse to any further means. No wound can be expected to heal in two or three hours, hence it is necessary to wait at least as many days, before making use of any other medicines. If the appearance of the wound is then good, and there are signs of reunion to the edges, with healthy pus, and there is no pain or soreness of any consequence, it would be highly improper to give any medicine with the view of hastening the improvement, as it would do more harm than good.

But should a wound, in which there is no foreign body, become very sensitive or painful, the bandage on which is not too tight, causing irritation by its stiffness or warmth, it can often be speedily relieved by a few passes of *mesmerism*. If the pain should return, however, and the patient is irritable, sensitive, fretful, restless, and unable to sleep, a drop of the 3d attenuation of tincture of *Coffea* will frequently relieve him. As this remedy acts but a short time, the evil may be renewed the third time, when *China*, 6th attenuation, which operates for a longer time, must be given, and will mostly effect a complete cure.

If a large red circle appear around the wound, with swelling of the part, and inflammation, *Pulsatilla*, 12th attenuation, will generally have a good effect.

If the wound shows a disposition to suppurate, notwithstanding it has been properly bandaged, *Mercurius solubilis*, 6th attenuation, is peculiarly indicated, and will usually remove this morbid condition in a short time. In cases of suppuration it is necessary, in order to prevent the adhesion of the bandage to the sore, to make use of some simple ointment; for this purpose the cacao butter, althea ointment, or simple cerate, answer best. A little of which should be spread on the dressing, and be renewed once a day until suppuration ceases.

Concussion or Contusion of the Chest. *

By falls, blows, carrying heavy loads, which are partly supported on the breast, compressions by wrestling, climbing, and in similar ways, it not unfrequently occurs, that pains of the chest are occasioned, attended with fever, spitting of blood, and followed finally by consumption. For the lighter cases of this kind, which are usually neglected, and on this account are more important, I shall here impart a treatment, which will often effect a cure in a short time.

1. In cases, when after an injury to some part of the chest there take place pain as if a boil or other suppuration were threatened, with throbbing pain, heat about the part, fever, which shows itself by alternate heats and chills, and is worse in the evening; loss of sleep with general heat and sweating towards morning, without thirst; short, dry cough, which increases the pain; *Arnica* should be first given, and will mostly afford relief; if this be insufficient, it may be followed in a day or two by *Pulsatilla*, which will generally complete the cure.

Sometimes the pain and fever are relieved by these medicines, but there is increased cough, with expectoration of a yellowish, thick mucus streaked occasionally with blood, which lasts a considerable time. For cases of this kind, *Mercurius solubilis*,

* This and the three following articles were inadvertently omitted in their proper places, and I have consequently inserted them here.

6th attenuation, should be given. When, however, the mucus has a sweetish taste, and there is tightness of the chest, *Nux vomica*, 12th attenuation, is mostly serviceable.

2. When the following symptoms are presented: pain at the part injured, such as usually remains after a blow, with inability to take a deep breath, to laugh or sneeze without increasing the pain; stitches in the chest; sensation of fulness, as if blood was collected there in large quantity; spitting of blood, tightness or constriction of the chest, which impedes respiration; dry heat at night in bed; restless sleep; fright and starting up in sleep; *Arnica* is likewise serviceable.

If there should still remain a degree of sensitiveness of the lungs; tendency of a dry, short cough, which constantly restricts breathing; if the face is still pale, the appetite small, the sleep unsound; *China*, 6th attenuation, will be most suitable.

Cardialgia.

This affection consists of a sudden tense and extensive swelling at the pit of the stomach, and in the region of the lower ribs in children previously in perfect health, attended by great restlessness, tossing about, screaming; drawing up of the legs, anxiety, and shortness of breath, sometimes amounting to suspension of respiration. The exciting cause is commonly a sudden change of temperature, but frequently, however, a strong, cold wind.

A similar state is also often met with in grown persons, after a violent fit of anger, which is accompanied by a feeling of constriction in the pit of the stomach, with difficulty of breathing and anxiety, as from a constant pressure on the breast, and a dry, exceedingly distressing cough, great restlessness and disposition to complain.

Both conditions are generally removed by a dose or two of *Chamomilla*. In some instances it may be necessary to resort to *Ignatia* or *Nux vomica*.

Inflammation of the Chest in general.

An inflammation of the chest comes on for the most part suddenly with strong chills, followed by violent continued heat, in which the breath is hurried, interrupted, sighing; at the same time there is a painful, dry, short cough, and a steady fixed pain in some part of the chest, which is acute, burning, cutting, or shooting, pressive, and constrictive in its character, and is aggravated by motion, breathing, and coughing. These are the prominent symptoms of inflammation of the chest, with which the laity should be acquainted as well as of the danger attendant thereon, so that he may promptly send for a physician. But in order that not too much time be lost before the arrival of the latter, I would remark here that for a violent, acute pain, whether confined to a small or large portion of the chest, attended by restricted respiration, constant inclination to cough, and with a considerable degree of fever heat and thirst, *Aconite*, 12th attenuation, is always the most suitable medicine at first, and may be given every three hours, until there be some improvement. *Bryonia*, 12th attenuation, may be given after *Aconite* with great advantage, and is chiefly indicated against severe stitches or burning pains in the chest; great anxiety; considerable degree of fever, though less active than at the commencement of the disease; cough somewhat looser and accompanied with mucous expectoration streaked with blood; and when the pains in the chest are very much increased by motion. If this medicine does not afford relief after having been repeated three or four times at intervals of three hours, *Belladonna*, 15th attenuation, should be given every six hours, and will mostly be found sufficient.

A similar treatment is required in inflammation of the chest of children, which frequently comes on in the form of catarrh, and generally arises from taking cold, and often begins with spasmodic twitchings; but most generally it is entirely catarrhal, and is always attended with loss of appetite and some fever, especially towards evening. At the same time there is a constant dry cough, with distortion of the muscles of the face and crying. *Aconite* is the remedy best adapted to afford relief.

Miscarriage or Abortion.

By unforeseen causes, such as a blow, a fall, bruise, &c, of the abdomen in pregnant women, it not unfrequently happens that premature birth is brought on. It is generally otherwise, however, with miscarriage or abortion, which usually happens in the second, third or fourth month of gestation, and seldom, or never depends on mechanical causes, but is owing to a morbid irritability of the uterus, which becomes much greater the more frequently miscarriage has occurred in the same subject. Often, indeed, without the slightest cause, symptoms set in at the very time at which miscarriage occurred in a previous pregnancy, which threaten the expulsion of the fœtus, and which are often so violent that it is desirable to have a suitable remedy at hand, especially when the distance of the physician renders it impossible to obtain him immediately.

The most common and often very sensible premonitory symptoms of miscarriage are: severe drawing or cutting pains in the abdomen, which begin in the small of the back and extend to both sides, and from thence toward the lower part of the abdomen, accompanied with a sensation as if the bowels or bladder were about to be evacuated. Often, at each return of these pains, which always occur periodically, there is a discharge of coagulated blood. In these cases, *Chamomilla*, 3d attenuation, is indicated, one drop in half a teacupful of water, a teaspoonful of the solution given every half hour.

But if the following symptoms occur: severe tensive or pressing pains in the whole abdomen, but especially about privates; cramplike contractive or swollen sensation, accompanied with a constant bearing-down towards the privates, as if all the intestines would fall out; severe pain in the small of the back, as if it would break; then *Belladonna*, in the attenuation already often mentioned, is the chief remedy.

On the contrary *Hyosciamus*, 6th attenuation, is indicated when there are general cramps of the whole body, which are interrupted by pushing the body or by moving a single limb, after which a general stiffness of all the joints again takes place;

loss of consciousness; discharge of bright red blood, which is increased with every new attack of cramp.—*Ipecacuanha*, in the third attenuation, is also useful in cases unattended by rigid spasms and unconsciousness, especially when there is cutting pain in the bowels about the navel; urgent pressure towards the uterus and rectum, with discharge of bright red blood.

If the blood is dark, clotted, tough, or ropy, with cutting pains deep in the abdomen toward the small of the back, *Crocus*, 3d attenuation, will be most suitable.

Predisposition to abortion in very strong, plethoric subjects, may be removed in some instances by avoiding altogether the use of coffee as a drink. If obstinate costiveness occasion it, a few doses of *Nux vomica* will mostly act as a preventive. In some cases it may also be prevented by taking at the beginning of pregnancy a dose of *Tinctura sabinæ*, 6th attenuation, every three or four days. One of the best preventives of abortion is *Sepia* taken in very small doses, and repeated every five or six days. The removal of the tendency to this disease, which is much more injurious than a natural delivery, can only be effected by the cautious treatment of an experienced physician, since all the medicines recommended here serve only as palliatives of abortion.

SECTION FOURTH.

ON THE PRESERVATION OF HOMŒOPATHIC MEDICINES.

Homœopathic medicines must be carefully preserved, in order that no injurious influences can affect them by which their strength may be impaired; otherwise it would be vain to hope for the desired effect in diseases.

Among the things that have the most injurious effect on medicines, belong chiefly air, warmth, and the ligth of the sun. —In order to guard them from these, they should be put in vials, stopped with good corks, not wormeaten, and placed in a well closed box, furnished with apartments, not exposed to the sunlight, and in a cool place. Where this cannot be done, the

medicines must be renewed at least once a year. They must also not be kept in a place where there are many strong exhalations and odors; consequently they must be protected from vapors of burning coal, sulphur, pitch; strong odor of coffee, burnt sponge, feathers, hair and other animal substances; from too strong fumes of tobacco, the effluvia from sluices and marshes, very odoriferous flowers, &c. And each vial, when not in use, must be constantly corked.

In regard to the preservation of the magnet, it may also be remarked: that it must always lie so that its north pole is directed to the north, and its south pole to the south, otherwise it loses its virtue. And, like the other articles, it must not be exposed to heat, particularly that of the sun, or suffered to fall, or be struck or knocked against hard bodies, nor its poles suddenly and frequently loosened from the armature to which it is usually attached, for all these diminish or destroy entirely its power. Hanging it up is of but little benefit; the better plan is, to let it lie in the direction mentioned, secured against disturbance, and with an armature upon its poles.

SECTION FIFTH.

ON THE DURATION OF EFFECT OF THE MEDICINES GENERALLY.

As I have only in some few instances, in the treatment of the foregoing diseases, mentioned the length of time a medicine may be expected to act, before a second should be given, it is therefore necessary that I should here give some direction for the use of the layman, so that he may not be induced, after the lapse of one or two hours, if in that time he perceive no improvement in the disease, to resort to a new medicine; and in this way often change an unimportant malady to one of some consequence, and to ascribe to the medicines the aggravations attributable only to his haste, impatience and ignorance, and which would have been avoided, if he had quietly awaited the action of the remedy.

1. When there is an evident and progressive improvement, however small in a disease, after giving a remedy, no other medicine should be given, nor should the same be repeated as long as the improvement continues, since all the benefit which the medicine already given is capable of producing, is not yet fully accomplished. And each new dose of any medicine, even that last given, and which is acting beneficially, would disturb the cure.

2. In every case it is necessary to wait at least from eight to twelve hours after taking one medicine before another is taken; if after this time there is no improvement manifested, the medicine has been erroneously chosen, and another better selected will be needed. Only in diseases which become suddenly worse and more painful, and therefore in very urgent cases, is any exception to be made to this rule, as in such cases the effect of the medicine is dissipated much sooner than in less painful and chronic diseases. In the first mentioned cases, therefore, after half an hour, or one, two or three hours, before the action of the first dose is spent, a second, third, &c., may be given; or a new medicine administered if no improvement follow the first; and the sooner, the shorter the duration of the action of the given remedy is of itself, as for instance *Camphor*, *Opium*, *Coffea arabica*, *Ipecacuanha*, *Sambucus*, *Aconite*, which in acute diseases does not exceed six to eight hours.

3. As long therefore as the progressive improvement from the medicine last given continues, so long is it to be supposed that, in this case at least, the action of the medicine is still going on, and hence the repetition of the dose is prohibited.

4. If the disease is not entirely removed by one remedy, but the symptoms after some improvement remain stationary, the same remedy must be repeated, or a new one exactly suited to the condition of the disease selected.

5. Among the symptoms which in all, especially in acute diseases, (or those which are rapid and violent in their course,) indicate improvement or the contrary, the state of mind and the general deportment of the patient are the most certain

and clear. In cases where the least amendment is perceptible, as for instance increased cheerfulness, or greater complacency, and freedom of mind, better spirits—a sort of returning *naturalness*. On the contrary, in cases where the disease begins to grow worse, the opposite of these symptoms take place. There is a more confused, imbecile state of mind, exciting more sympathy, and of the whole demeanor of the patient in all positions, lying or standing, which are manifest to the slightest observation, but are not easily described.

DIRECTIONS

TO

ENABLE PATIENTS RESIDING AT A DISTANCE FROM A HOMŒOPATHIC PHYSICIAN TO GIVE

A

FULL DESCRIPTION OF THEIR DISEASES IN WRITING.

DIRECTIONS

TO

ENABLE PATIENTS RESIDING AT A DISTANCE FROM A HOMŒOPATHIC PHYSICIAN TO GIVE A FULL DESCRIPTION OF THEIR DISEASE IN WRITING.

Let the patient first describe his complaints, as he would have done without these directions; detail their beginning and progress, and the probable cause.

It is to be understood that the age, sex, occupation, and matrimonial relations are to be given, if the physician is unacquainted with them all.

Then the habit of the body should be given, whether large or small, weak or strong, thin or stout? sensitive? or easily liable to take cold?

Also the complexion, whether pale, red, or brown?

The color and texture of the hair and eyes, whether the latter are blue, brown? &c.

Bodily defects, for instance if any rupture, falling of the womb; whether crooked, hunch-backed, lame? &c.

The disposition, whether mild or passionate? firm or yielding, lively, communicative or quiet, reserved, anxious, easily vexed, very irritable, easily frightened? &c. Whether the mental emotions are of long continuance, or soon pass off?

Then let him distinctly describe all the diseased symptoms, sensations, and pains, of which he has to complain.

Where they are felt, what part, which side, whether on the surface or deeply seated, the size of the painful spot? &c.

The character of the pains and sensations, whether pressive, stitching, tearing, throbbing, boring, constrictive, expanding,

drawing, griping, gnawing, cutting, pinching, crawling, jerking, tickling, dull, as if asleep, as if dislocated, as if beaten or bruised, &c.—from several of these feelings together—or with whatever natural expressions he can describe them?

Likewise whether the attack, sensation, or pain, is constant, intermitting, or remitting; whether it comes on, increases, diminishes, or disappears at certain hours, times of the day, days, or in certain positions of the body?

Whether it comes on, disappears, increases or abates by motion or rest, by lying down, sitting, stretching, bending, walking, standing—by warmth or cold, in the open air or in the room, by light or odors; by speaking, swallowing, eating or drinking —or soon after eating—by motion of the affected part, by touching or pressing it, by emotions of the mind—fright, anger;—by working, thinking, reading, &c.

If it is attended with anxiety, or anguish; whether it affects the reflective powers or memory, or interferes with the proper use of the senses, seeing, hearing? &c.

Whether the motion and natural direction of the diseased part has been injured (lamed) thereby?

Whether connected with complaints in other parts of the body, and if so, in which?

Or whether the disease mentioned alternates with one in another part of the body?

Whether the affected parts are red or swollen?

Whether the swelling is hard or soft? painful to the touch, or a dent or pit can be made in it by pressure?

With regard to the individual organs or parts of the body and their functions, which are not the chief seat of the malady, what symptoms are there likely to be useful, viz:

Disposition—whether patient, complaining, sorrowful, angry, suspicious, anxious, fearful? &c.

Whether it differs materially during the sickness, or at its onset from the healthy state?

Conditions of the mental faculties, of thought, reflection; disposition, and capability for mental and physical labor?

Accurate description of the disorders of mind, disposition and judgment, according to their outward manifestation?

Whether there be vertigo, or dulness of the head, and of what kind?

Eyes; how is the power of vision? Is there the appearance as if looking through gauze or fog? Are there dark or black spots before the eyes; or sparks or false colors? Do objects appear double or wavering? Is the patient short- or long-sighted? The pupil small, large, or variable? Is there increased secretion of tears? Are the eyes red, inflamed, intolerant of light? Do the eyelids stick together? Do they open and shut properly? Do they twitch and tremble? Are there styes on the lids, or spots in the cornea?

How is the hearing? Is there roaring, buzzing, or ringing in the ears? Is the earwax dry or moist? Is there running from the ears; if so, has it an offensive odor?

Is there any obstruction of the nose? Dry or fluid catarrh, sneezing, sense of smell, soreness and ulceration of the nostrils. Bad smell from them; bleeding at the nose?

Condition of the teeth.—Whether covered with tartar, loose, or hollow; how many have fallen out or been extracted, and why?

Whether the gums are pale or red, firm or soft, spongy, swollen, bleed readily, or have receded from the teeth?

Whether the mouth is too dry? Whether there is much expectoration (viscid, slimy, of a bad smell, bloody)? Whether there are tumors or ulcers in the cavity of the mouth, on the tongue, the tonsils, palate, roof of the mouth, or in the throat, or a collection of mucus on these parts, blisters on the lips? &c.

Whether the tongue is moist or dry, red, tender, chapt, sore, clean or coated (white or yellow)?

Whether speaking, chewing, or motion of the tongue, are unmolested?

Whether swallowing liquids or solids is difficult?

Whether there is offensive breath?

Whether the taste is perfect or impaired; slimy, saltish, bitter, sour, or putrid? Whether food has its proper taste, or tastes slimy, bitter, sour, saltish? &c.

In regard to food and drink.—Whether there is a preference for any particular article?

Whether there are any complaints arising after eating or drinking? and what?

Whether there are eructations of food? Or of wind, and of what taste? If like the food previously taken?

Or whether fluids arise from the stomach, or collect in the mouth? Of what taste?

Whether there is vomiting? If so, whether of water, saliva, or mucus; acrid, sour, of a putrid smell and taste; bitter, yellow, green, of fluid, or clotted blood, or of the food eaten?

Whether there is nausea, or sick stomach?

Whether the abdomen is tense, distended, full and hard, or empty and sunken?

In pains and complaints of the stomach, bowels, and abdomen, the precise locality must be distinctly pointed out (whether at the pit of the stomach, about the navel, under the ribs, in which side? &c.).

Whether there is flatulency? Rumbling, grumbling and rattling in the abdomen? Whether the wind passes off, or is retained; and what kind of symptoms it appears to give rise to?

If the stools are free or difficult; how often; hard, soft, or very loose; claylike or mucous, bloody, &c.; the color of the evacuations; whether they are preceded, accompanied or followed by pain or uneasiness, and what kind? Whether there are worms evacuated—large or small?

Whether there are sores about the rectum and anus, and warts and tumors occasionally appear; whether the tumors bleed? &c.

Whether there is any difficulty attending urination, either before, during, or after? and of what kind?

Whether there is much or little urine discharged?

Appearance of the urine (clear like water; of the natural

color, or brown, red? &c.); whether it changes soon, or the sediment is mucous, sandy, white, or red? Whether it contains blood, pus, or gravel?

Whether the breath is short, or otherwise affected; whether the patient can go up stairs, or walk without difficulty. Whether he is obliged to lie with his head much raised in bed; whether there is any panting, wheezing, or rattling to be noticed in the chest? Whether the patient can take a deep breath, or what hindrance he feels?

State of the voice,—whether rough, hoarse, hollow? &c.

Is there cough? And is it light, short, or hard; deep, or long continued—with swelling of the face, and loss of breath? How does the cough sound? Is it dry, or attended with expectoration?

Is the expectoration easy, or difficult; is it scanty, or copious; mucous, purulent, viscid, or tenaceous, bloody (streaked with fresh or black blood, or of clear blood), white, yellow, green, or grey; does it taste slimy, saltish, sweet, bitter, or putrid?

Does there appear to be mucus in the fauces, windpipe, or deep in the chest? At what spot does the irritation to cough seem to arise? From what part does the expectoration proceed?

Is there palpitation of the heart, and in what way? or throbbing in other parts of the body? Does the patient suffer from congestion or agitation of blood?—State of the pulse?

Are there swellings or suppuration of the glands under the jaw, under the arms, on the hairy scalp, or about the groins? Is there goitre, or enlargement of the glands in front of the windpipe?

Are there in the other parts of the body, especially the extremities, swellings of the bones, or of the joints, or boils, tumors, swollen or varicose veins? Are particular parts and limbs red, swollen or painful?

Are the hands and feet swollen?

Are one or more limbs lame or palsied?

Are there cramps in the muscles of some limbs; or is there

trembling, twitching, jerking, numbness, or other symptoms in them?

Is the skin pale or yellow? &c.

Is it dry, or disposed to perspire? Is it unhealthy?

Is there itching of the skin (tickling, crawling, gnawing, biting, burning, formication, or sticking)? Is it relieved by scratching, or is it thereby changed to another place?

Are there knots, boils, tumors, abscesses, chilblain, or corns, in the skin? If so, what particular symptoms do they occasion?

Likewise eruptions on the skin, pimples, spots, blisters, &c., are to be described as to color, number, size; whether they are filled with water, or pus; whether they are covered with scabs and scurf; how long they have existed, and what parts they occupy?

Also ringworms, tetters, scurfs, scales; brown and blue spots, liver-spots, freckles; chaps, corroding blisters, soreness of the corners of the mouth, &c.; warts; tumors on the bones; soreness of the skin; if the nails are ill-formed; if the hair falls off, and the scalp contains scales and scurf.

If there are ulcers; whether the edges and bottom are inflamed; whether there is proud flesh in them; whether they have raised edges, or bleed, and the bottom appears red, black, or fatty? Whether the matter is copious and thin, acrid or thick, bloody, white, yellow, black, or offensive to the smell?

Is there chilliness, or rather a feeling of heat? Coldness, heat, or perspiration of particular parts?

Is there sweating of the feet? If so, is it warm, cold, or of a bad smell?

When the patient has fever, does it consist of cold, heat, and sweat? Alternately, or successively? And in what order? How long does each last? How violent? Affect the whole body, or a part? With or without thirst? With pale or red face and skin?

Do other symptoms accompany each attack of fever (chill, heat, and sweat)?

Any other peculiar morbid symptoms, for instance, fainting, spasms, epileptic fits, cramp of the stomach, tightness of the chest, &c., are to be accurately described in their beginning, progress and termination; how and by what means they are occasioned and relieved; whether they are better or worse at certain hours and times of the day, or in certain directions and positions of the body.

How does the patient sleep? What length of time? Is it restless, interrupted by frequent waking, and starting up in fright? Does he talk in his sleep; does he groan; has he night-mare? Does he dream much and with distress, and what? Does he snore, or sleep with his mouth open? What posture does he habitually lie in when asleep?

How is the strength of the patient? Is he obliged to remain in bed, or can he continue up; is he languid, weary, indisposed to exercise? &c.

Has he wasted away?

Finally, the patient must also mention, what diseases he has already had during his life—especially the eruptive diseases—itch, scald-head, tetter, erysipelas, small-pox, scarlet-fever, measles, pimples in the face, itching of the skin, &c.

Also, whether he has had scrofula (disease of the glands), rickets, gout, rheumatism, hæmorrhoids (piles), difficult teething, worms, spasms, epilepsy (falling sickness), whooping cough, inflammation of the lungs or other organs, intermittent inflammatory or nervous fever, jaundice, hæmorrhage of any kind, diseases of the teeth, apoplexy, or palsy, sweating of the feet, ulcers, or the venereal disease?

He must likewise mention what length of time, and in what manner he was treated in these diseases? Whether he used baths, mineral baths, water cure, herb or mercurial medicines, or vapor baths, and also the mode and kind?

Also what he has been using in the present disease? Whether he has used bleeding, emetics and purgatives, sweating medi-

cines, drinks to purify the blood, teas of Valerian, stomach drops, China, &c., and if he is accustomed to any of these remedies?

Whether he is in the habit of drinking intoxicating liquors, wine, brandy, strong beer, or coffee and tea; or eating very fat food, much acid, or high seasoned food?

Whether he eats and drinks much, and what?

He must state fully his manner of life and diet; whether he is accustomed to woolen clothing? Whether his dwelling is healthy?

He must also state any afflictions and emotions of the mind which are likely to retard his recovery, or may have occasioned his disease; for instance unhappy love, disappointed hopes, mortifications, domestic discords, or poverty.

He must likewise state, whether or not early debauchery of some kind may not have contributed to his disorder.

If he has been sickly from his birth, his disease is probably hereditary; if in infancy he had not had the breast, but was raised up by hand, it should be mentioned.

The male sex are also to communicate what concerns their sexual acts and sexual organs; the state of his procreative appetite, and his generative power.

Whether involuntary emission of semen takes place? How often? With or without dreams? With a feeling of weakness afterwards, or with alleviation?

Whether there are or have been swelling of the testes, stricture of the urethra, buboes, swelling of the penis and ulcers? Also gonorrhœa, and its symptoms?

Females must likewise state: at what age their menses first came on? If she remained regular from that time, or have the menses been suppressed? How are they now? regular, too frequent, or too seldom? Too profuse, or too weak? How many

days does it continue when in health, and how many when sick? What attendant symptoms are there, either before or after? What influence has motion or rest? &c.

Is the discharge red, dark, clotted, or of a bad smell?

Is there a discharge of mucus or whites? since when? at all times, or only before and after the menses? acrid or mild? watery or thick? white, yellow or greenish? of an offensive odor?

Had she ever the green sickness (chlorosis), or hysterics? How affected by the last?

Finally, information in regard to the sexual appetite, &c.; influence upon the health, &c., is very desirable to the physician.

If she is, or has been married?

Whether she has children? How often she has borne them?

Whether the labors were easy and natural, or difficult and attended by dangerous symptoms? If the latter, from what cause, and what particular symptoms (for instance, hæmorrhage)?

Whether she had complaints during pregnancy, and what?

Whether she nurses; how long, how often; with unpleasant feelings at the time, or afterwards?

Whether she has had sore nipples, or gathered breast? If from these or other causes she has lumps, or hardness in the breasts?

In what year of her age did the menses cease altogether? and with what complaints? With what influence upon the health?

ON

MESMERISM AND MAGNETISM.

DIRECTIONS

FOR THE

USE OF MESMERISM AND MAGNETISM.

Mesmerism, so named from its discoverer, *Mesmer;* also called animal magnetism, consists in the medicinal action of one living body on another, and by no means deserves the inconsiderate detraction which it has so often been subjected to. Any remedy may be misused, and this has been the case with mesmerism in a high degree; but the blame should not rest on the instrument, which is due to the person who makes use of it.

Almost every healthy and strong person possesses the faculty of operating curatively by mesmerism on others: sickly and weakly persons, however, ought not to undertake it, as they either weaken the patients, or impart to them their own unhealthy condition, and thereby aggravate the disease. The best evidence that mesmerism does not rest entirely on the imagination, is that it acts generally so beneficially in children, and often effects cures where other remedies have failed; it is however improper for aged or emaciated sickly persons, nurses, or midwifes, to be entrusted with its administration, but it should be practiced by young healthy persons alone.

This curative agent, often foolishly abused, which by the powerful will of a well-intentioned person flows into a patient, by means of contact, operates in part homœopathically, by exciting symptoms similar to those of the disease to be remedied, and when applied with this view, a single pass with the palm of the hand, from the crown of the head downward, over the body to the ends of the toes, given with moderately strong will and not too slowly, will be sufficient;—thus, for instance, dangerous uterine hæmorrhage may often be relieved in this way. It is also partly beneficial in distributing unnatural congestions, and bringing about an equilibrium of vital energy; thus in congestion of blood to the head, and in persons debilitated by anxiety,

loss of rest, &c., relief is often obtained by one or two passes. Partly also it acts by directly supplying the requisite amount of vital power, to a single weak part or to the whole organism—an end, which can be attained by no other potency so surely, and so safely, without interfering with other medical treatment. In an individual member, or part, this is effected by placing the hand or points of the fingers on it, while the will is powerfully and with the right intention fixed on the affected part, which is probably the most serious local symptom of an internal chronic malady, for instance in old ulcers, amaurosis, palsy of a single limb, &c. But the most satisfactory effects of this agent is sometimes manifested on the whole organism, in the resuscitation of persons who have been for a length of time asphyxiated or apparently dead, by the application of the most powerful will of a man in the full enjoyment of vital energy.

This mesmerising depends upon an influx of more or less vital fluid or power into the patient, and is hence called positive mesmerism. A practice opposite to this, as its effects are a counterpart, may be called negative mesmerism. To this belong the passes which are used to awake somnambulists. This dispossessing of a vigorous person, of the excessive accumulation of vital power in a single part or organ by negative mesmerism is most simply and effectually performed by a rapid motion of the extended right hand, parallel to the body, and about an inch distant, from the top of the head to the ends of the toes. The quicker this pass is made, the greater will be the discharge. Thus, for instance, in spasms or apparent death occurring in a female previously healthy, when the menses has been suddenly checked by violent mental emotions, the excess of vital power probably accumulated in the precordia is discharged by a quick negative pass, and put in equilibrium through the whole system, so that usually restoration immediately follows. Thus, too, a moderately quick negative pass will at times relieve the anxiety, restlessness, and loss of sleep occasioned in very irritable persons by too strong positive passes.

It is also to be observed that the person to be mesmerised, must not wear silk on any part of his body.

Mesmerism can be used even during the action of another remedy previously administered, when any sudden illness, such as spasms, takes place, which it is desirable to remove; since a moderate application of mesmerism does not disturb the action of the remedy. In children this is often of great benefit.

The patient, after being mesmerized, should remain a short time at rest, either sitting up or lying down, and its effects attended to. At times, as after other medicines, there is at first some aggravation of the symptoms, soon followed by improvement. Many patients begin to perspire a little, and this must be attended to, so as to guard against taking cold from a draught of air, &c.

The *magnet* possesses a similar and wonderful power over the human organism, and in many diseases cures specifically, though this has for a long time been doubted, laughed at, and ascribed to imposture. By the numerous and continued observations of *Hahnemann*, it has been undeniably established that the magnet is often one of the most powerful and beneficial remedies that we can make use of, where other means have failed. It usually acts very promptly, as may be known by the aggravation of the symptoms, and consequently relieves also as speedily.

It should be applied in the following manner: The patient is seated so that he always has the point of the magnet to be touched before him—whether the north or south pole, or the whole surface is to be used—while the magnetic bar is placed with its north pole to the north, and the south pole to the south. The patient must neither take it in his hand, nor adjust or remove it himself, otherwise a different effect than was intended will be produced, or the effect will be entirely obviated.

As it is necessary that the diseased part should be placed immediately in contact with the magnet, the patient has nothing more to do, than touch with the point of any finger that he may prefer, that pole which is most suitable for the particular form of the disease. If the middle is to be used, then the patient

should lay about three fingers flat upon the middle of the magnet, so that he may have more than one point of contact, as in all probability the peculiar curative virtues of the whole surface consist in the joint action of both poles; for it is observed, when the magnetic needle is drawn lengthwise over the bar, that it turns itself now to one, now to the other pole, showing that it alternately finds a friendly and opposite polo near it.

The contact need not continue long. Usually four or five minutes are sufficient; but it would be well for the layman to be aware of the usual temporary aggravation of the symptoms which he is desirous to remedy. As soon as this appears, he must withdraw from the magnet, and it must be taken out of the room. The aggravation will then soon pass off, and the improvement speedily follow. I have cured pains in carious teeth of a year's standing by one application of the magnet.

If the wrong pole should have been inadvertently selected and applied, it will be known by the malady for which it was used, becoming not worse, but for the moment better. The patient need not, however, be deceived and think his disease cured, since it is only palliated, and will certainly soon return. But let the opposite pole be applied for a few minutes, or until the affection becomes worse, and a permanent cure may be expected with certainty.

TABULAR INDEX

OF THE

REMEDIES USED, THEIR ENGLISH NAMES, ANTIDOTES,

AND

DISEASES IN WHICH EMPLOYED.

TABULAR INDEX

OF THE

REMEDIES USED, THEIR ENGLISH NAMES, ANTIDOTES, AND DISEASES IN WHICH EMPLOYED.

(The English names are in Small Capitals, the Antidotes in Italics.)

Aconitum napellus (Aconite). Monk's hood. (*Camphora, Nux vom., Wine, Vinegar, Paris.*)
Amenorrhœa . . . page 46
Anger 50
Anus, Itching of the . . 51
Apparent Death of new-born Children (Asphyxia) . . 54
Apoplexy 56
Asthma, or Spasms of the Chest 58
Bleeding at the Nose . . 62
Blood, Spitting of . . . 63
Bowels, Inflammation of the . 76
Brain, Inflammation of the . 68
Catarrh, or Hoarseness . . 78
Catarrhal Inflammation of the Eyes 124, 126
Chicken-Pox (Varicella) . . 81
Childbed-Fever 193
Congestion of Blood to the Head 88, 89
Congestion of Blood to the Chest 91
Cough 101
Croup 99
Crusta Lactea 184
Dropsy of the Chest (Hydrothorax) 113
Dysentery 114
Eruptions in general . . 129
Erysipelas 120
Eyes, Inflammation of, in new-born Children . . . 122
Eyes, Inflammation of, from difficult Teething . . . 122
Eyes, Inflammation of, from the presence of foreign bodies 123
Facial Neuralgia . . . 131
Fever, bilious and gastric . 137
" intermittent . . . 136
" milliary (Rash) . . 139
Fright 142
Gout . . . . . page 150
Grippe 153
Hæmorrhage 164
Headache from Congestion of Blood to the Head . . 155
Inflammation 168
" of the Chest . 243
" of the Kidneys . 172
" of the Liver . 177
" of the Lungs . 180
Lumbago 179
Measles 182
Night-Mare 187
Palpitation of the Heart . . 158
Pleurisy 190
Rheumatism 195
Scabs of the Face in Children 130
Scarlet-Rash 200
Sciatica 200
Sleeplessness 203
Small-Pox 204
Sore Throat 207
Sun-Stroke 219
Teething of Children . . 222
Toothache from Congestion of Blood 225
Urinary Complaints . . . 227
Vaccination 228
Varioloid 229
Vomiting from mental emotions 232
Worms 239

Antimonium crudum. Crude Antimony. (*Hep. sulph., Merc.*)
Bilious and gastric Fever, page 137
Delirium tremens, or Drunkenness 103
Disordered Stomach . . 215
Summer-Complaint (Cholera Infantum) 83
Vomiting from vitiated Stomach 231

Arnica montana. Leopard's Bane. (*Camph., Ignat., Ipecac.*)
After-Pains . . . page 45
Apoplexy 56
Bleeding at the Nose . . 62
Blood, Spitting of . . . 63
" Vomiting of . . . 65
Bloody Urino 65
Boil, or Furunculus . . . 66
Congestion of Blood to the Head 89
Contusion of the Chest . 241, 242
Corns 94
Disordered Stomach . . 213
Earache (Otalgia) . . . 117
Glands, Swelling of . . . 145
Gout 150
Inflammation of the Kidneys . 173
Injuries of the Feet . . 134
Loins, Pain in the . . . 178
Milk-Fever 183
Sprains 212
Swelling of the Cheeks . . 79
Urinary Complaints . . 227
Varicose Veins . . . 230
Womb, Falling of the . . 237
Wounds 240

Arnica Tincture.
Bed Sores . . . page 207
Breasts, gathered . . . 69
Bruises 73
Congestion of Blood to the Head 89
Excoriations 129
Fatigue 133
Frost-Bite 143
Inflammation from Injuries . 168
Injuries of the Feet . . 134
Warts and Corns . . . 235

Arsenicum album. White Arsenic. (*China, Ferrum, Graphites, Hepar sulph., Ipecac., Kali carb., Nux vom., Sambucus, Veratrum.*)
Amenorrhœa . . . page 48
Anger 49
Anus, Itching of the . . 51
Apthæ (Sore Mouth) . . 53
Blood, Spitting of . . . 64
Boil, or Furunculus . . . 66
Bowels, Inflammation of the . 77
Cheeks, Swelling of tho . . 79
Cholera Infantum, or Summer-Complaint 84
Cholera Asiatica . . . 87
Crusta Lactea 185
Dropsy in general (Anasarca) . 111
" of the Abdomen (Ascites) 112
Dropsy of the Chest (Hydrothorax) . . . . page 113
Eyes, Inflammation of, from a Stye 124
Facial Neuralgia . . . 131
Fever, intermittent . . . 137
Mania a potua 104
Sciatica 201
Scrofulous Inflammation of the Eyes 128
Ulcers on the Extremities . 226

Artemisia.
Colic from Worms . . page 95

Aurum metallicum. Pure Gold. (*Bellad., China, Cupr., Mercury.*)
Catarrh-Fever . . . page 79
Eyes, Inflammation of, from a Stye 123
Facial Neuralgia . . . 132
Offensive Breath . . . 188
Womb, Falling of the . . 237

Belladonna. Deadly Nightshade. (*Coffea, Hyoscyamus, Hep. sulph., Pulsatilla.*)
Amenorrhœa . . . page 46
Apoplexy 56
Boil, or Furunculus . . . 66
Brain, Inflammation of the . 68
Breasts, gathered . . . 69
Bowels, Inflammation of the . 77
Child-Birth, or Labor . . 44
Catarrhal Inflammation of the Eyes 124, 126
Childbed-Fever . . . 193
Colic during Menstruation . 98
Congestion of Blood to the Chest 91
Cough 101
Crying of Infants . . . 102
Dysmenorrhœa, or painful Menstruation 114
Ears, Inflammation of the . 119
Epilepsy 120
Erysipelas 120
Erysipelatous Inflammation of the Breasts 71
Facial Neuralgia . . . 131
Glands, Swelling of the . . 145
Headache from Congestion of Blood to the Head . . 155
Hooping-Cough . . . 160
Hydrophobia 162
Inflammation 168
" of the Chest . 243
" of the Kidneys. 172
Lameness, spontaneous . . 174

Lumbago . . . . page 179
Measles 182
Milk-Fever 184
Miscarriage, or Abortion . . 244
Offensive Breath . . . 188
Rheumatism 195
Scarlet-Fever 199
" Rash 200
Scrofulous Inflammation of the Eyes 127
Sleeplessness 203
Small-Pox 204
Sore Throat 206
Stomach, Cramp of the . . 218
Sun-Stroke 219
Teething of Children . . 223
Urinary Complaints. . . 227
Walk, Children learning to . 234
Womb, Falling of tho . . 237
Worms 239

Baryta acetica.
Feet, Sweating of . . page 135
Scald-Head 198

Bryonia alba. White Bryony. (*Acon., Cham., Ignat., Nux vom.*)
Amenorrhœa . . . page 46
Anger 49
" with Fright . . . 50
Apthæ, or Sore Mouth . . 53
Asthma, or Spasms of the Chest 59
Bowels, Inflammation of the . 77
Childbed-Fever . . . 193
Cholera Infantum, or Summer-Complaint 84
Constipation 93
Disordered Stomach . . 214
Dropsy of the Abdomen (Ascites) 112
" of the Chest (Hydrothorax) . . . 113
" of the Feet . . . 111
Erysipelas 121
Erysipelatous Inflammation & Swelling of the Breasts . 71
Frost-Bite 144
Glands, Swelling of the . . 145
Gout 149
Grippe 154
Headache from Constipation . 157
Inflammation 168
" of the Chest . 243
Jaundice 170
Liver, Inflammation of tho . 177
Lumbago 179
Lungs, Inflammation of the . 181
Milk-Fever 184
Pleurisy . . . . page 190
Rheumatism . . . 195, 196
Stomach, Cramp of the . . 218
Vomiting from mental emotions 232

Calcarea carbonica. carbonate of lime. (*Camph., Nitric acid, Sulphur.*)
Abscess . . . . page 43
Anus, Itching of the . . 52
Breasts, gathered . . . 70
Cheeks, Swelling of the . . 80
Epilepsy 120
Eyes, Inflammation of, in new-born Children . . 122
" inflamed from difficult Teething . . . 123
Specks on the Eyo . . . 128
Leucorrhœa, or Whites . . 175
Ring-Worm 197
Walk, Children learning to . 234
Warts and Corns . . . 234
Wen 236
Womb, falling of the . . 237

Camphora. Camphor.
Anasarca, or Dropsy . page 111
Inflammation of the Brain . 68
Grippo 153
Sun-Stroke 219

Camphora Tincture.
Cholera Asiatica . . page 86
Fainting 132

Cannabis sativa. Hemp. (*Camphora.*)
Inflammation of the Kidneys, page 172
Specks on the Eye . . . 128

Cantharides. Spanish Fly. (*Camphora.*)
Inflammation of the Kidneys, page 172
Urinary Complaints . . 227

Capsicum annum. Cayenne Pepper. (*Camph.*)
Anus, Itching of the . page 51
Facial Neuralgia . . . 131
Grief and Sorrow . . . 154

Carbo vegetabilis. Vegetable Charcoal. (*Arsenic, Camphora, Coffea.*)
Cholera Infantum . . page 84
Dropsy of the Chest . . 113

Excoriations . . . page 129
Itch 169
Disordered Stomach . . 215
Sun-Stroke 219
Ulcers on the Extremities . 226
Worms 238

Causticum. CAUSTIC. (*Coffea, Colocynth, Nux vom.*)

Amenorrhœa . . . page 47
Dysmenorrhœa, or painful Menstruation 115
Itch 169
Leucorrhœa, or Whites . . 175
Ring-Worm 197
Walk, Children learning to . 234

Chamomilla. COMMON CHAMOMILE. (*Aeon., Coceulus, Coffea, Ignatia, Nux vom., Pulsat.*)

After-Pains . . . page 45
Anger 48, 49
" from Fright . . . 50
Asthma, or Spasms of the Chest 60
Bowels, Inflammation of the . 77
Cardialgia 242
Catarrh, or Hoarseness . . 77
Catarrhal Inflammation of the Eyes 124, 126
Cheeks, Swelling of the . 79, 80
Childbed-Fever . . . 193
Cholera Morbus . . . 85
Cold in the Head, or Catarrh . 87
Colic from cold or wet Feet . 91
" during Menstruation . 98
Congestion of Blood to the Head 90
Cough 100
Crying of Infants . . . 102
Diarrhœa 106
" from Cold . . 107
" from Fright . . 107
" from Vexation . . 109
Disordered Stomach . . 213
Dysentery 114
Dysmenorrhœa, or painful Menstruation 115
Earache 118
Epilepsy 120
Excoriations 129
Eyes, Inflammation of, from difficult Teething . 123
" Inflammation of, in newborn Children . . 122
Fever, bilious and gastric . 138
" milliary (Rash) . . 139
Frost-Bite 144
Gout 149
Headache from suppressed Perspiration . . . page 158
Jaundice 169
Labor, or Child-Birth . . 44
Liver, Inflammation of the . 177
Miscarriage, or Abortion . . 244
Palpitation of the Heart . . 158
Rheumatism 195
Sciatica 201
Sleeplessness 202
Sore Throat 205
Spasms 208
Stomach, Cramp of the . . 217
Teething of Children . 222, 223
Toothache from Cold . . 224
" from Congestion of Blood . . . 225
" from decayed Teeth 223
Uterine Hæmorrhage . . 166
Vomiting from mental emotions 232
" from Worms . . 233

China officinalis. PERUVIAN BARK. (*Arnica, Arsenic, Bellad., Calc. carb., Carbo veg., Ipecac., Sulph.*)

Amenorrhœa . . . page 47
Asphyxia 55
Bed Sores 207
Bleeding at the Nose . . 63
Blood, Vomiting of . . . 65
Chlorosis, or Green Sickness . 152
Constipation 94
Contusion of the Chest . . 242
Diarrhœa from Cold . . 107
Disordered Stomach . . 214
Dropsy of the Abdomen (Ascites) 112
Dysentery 114
Epilepsy 120
Facial Neuralgia . . . 131
Fainting 133
Fever, intermittent . . . 137
Flatulency 141
Hæmorrhage 164
Hooping-Cough . . . 160
Jaundice 170
Poisoning by Arsenic . . 58
Self-Pollution 189
Spasms 211
Toothache from Congestion of Blood 225
Urinary Complaints . . 227
Uterine Hæmorrhage . . 166
Vomiting from Worms . . 232
Worms 239
Wounds 240

Cicuta virosa. (*Arnica.*)

Epilepsy . . . . page 120

Cina. Worm-seed. (*Ipecac.*)
Childbed or Duration of Confinement . . . page 82
Colic from Worms . . . 95
Spasms 209
Worms 239

Cinnamomum Tincture. Cinnamon.
Labor, or Child-Birth . page 44
Uterine Hæmorrhage . . 165

Cocculus indicus. Indian Berries. (*Camph., Nux vom.*)
Cramp of the Stomach . page 217
Dysmenorrhœa, or painful Menstruation 115
Leucorrhœa, or Whites . . 175
Spasms 210
Vomiting from Cramp of the Stomach 233

Coffea cruda. Mocha Coffea. (*Aconite, Cham., Nux vom.*)
After-Pains . . . page 45
Anger 48
Asthma, or Spasms of the Chest 58
Colic during Menstruation . 97
Congestion of Blood to the Head 90
Crying of Infants . . . 102
Diarrhœa from disordered Stomach 108
Dysmenorrhœa . . . 115
Hemicrania 183
Labor, or Child-Birth . . 44
Palpitation of the Heart . . 138
Scarlet-Rash 200
Sleeplessness 203
Sore Throat 206
Spasms 209
Stomach, Cramp of the . . 217
Teething of Children . . 222
Toothache from Congestion of Blood . . . 225
" from decayed Teeth 223
Wounds 240

Colchicum autumnale. Meadow Saffron. (*Nux vom., Cocculus, Pulsatilla.*)
Dysentery . . . page 114
Fatigue 133
Rheumatism 197

Colocynthis. Colocynth. (*Camphora, Caust., Coffea, Cham.*)
Colic from Hæmorrhoids, page 97
Dysentery 114
Facial Neuralgia . . page 132
Frost-Bite 144
Sciatica 200

Conium maculatum. Hemlock. (*Nitri spiritus dulcis, Coffea.*)
Amenorrhœa . . . page 48
Bruises 73
Glands, Swelling of the . . 144
Hooping-Cough . . . 160
Scrofulous Inflammation of the Eyes 127
Self-Pollution 189
Specks on the Eye . . . 128

Crocus sativus. Saffron. (*Acon., Opium.*)
Congestion of Blood to the Head during Menstruation . page 90
Bleeding at the Nose . . 62
Miscarriage, or Abortion . . 245
Uterine Hæmorrhage . . 166

Cuprum metallicum. Pure Copper. (*Bellad., China., Ipecac., Mercury, Nux vom.*)
Cholera Asiatica . . page 87
Epilepsy 120
Hooping-Cough . . . 160

Drosera rotundifolia. Sun-dew. (*Camph.*)
Hooping-Cough . . page 160

Dulcamara. Bitter-Sweet. (*Camphora, Ipecac., Mercury.*)
Abscess . . . . page 43
Amenorrhœa 46
Breasts, gathered . . . 68
Catarrh, or Hoarseness . . 78
Cheeks, Swelling of the . . 81
Cholera Infantum, or Summer-Complaint 84
Diarrhœa from Cold . . 107
Dropsy of the Abdomen (Aseites) 112
Fever, milliary (Rash) . . 140
Frost-Bite 144
General Dropsy . . . 111
Glands, Swelling of the . . 144
Gout 149
Rheumatism 195
Scald-Head 198
Scarlet-Rash 200

Euphrasia officinalis. Eye-Bright. (*Pulsatilla.*)
Catarrhal Inflammation of the Eyes . . . page 125, 126

Eyes, Inflammation of, from the Presence of Foreign Bodies . . . . page 123

Ferrum metallicum. Pure Iron. (*Arnica, Arsenic, Belladonna, Ipecac., Mercury, Pulsatilla.*)
Chlorosis, or Green Sickness, page 153
Dropsy of the Abdomen . . 112

Filix Mas Tincture. Male Fern.
Tape-Worm . . . page 220

Graphites. Pure Black Lead. (*Arsenic, Nux vom.*)
Amenorrhœa . . . page 47
Breasts, gathered . . . 70
Crusta Lactea 185
Erysipelas 121

Hepar sulphuris calcarea. Sulphuret of Lime. (*Acetum, Belladonna.*)
Abscess . . . . page 43
Catarrh-Fever 79
Catarrhal Inflammation of the Eyes 125
Cheeks, Swelling of the . . 80
Croup 99
Crusta Lactea 185
Ears, Discharge from the (Otorrhœa) 119
Felon (Whitlow, or Panaris) . 140
Glands, Swelling of the . . 145
Kidneys, Inflammation of the 173
Measles 182
Poisoning by Arsenic . . 58
Scald-Head 198
Scrofulous Inflammation of the Eyes 127
Ulcers on the Extremities . 226

Hyoscyamus niger. Henbane. (*Bellad., Camph., China.*)
Blood, Spitting of . . page 64
" Vomiting of . . . 65
Cough 101
Epilepsy 120
Grief and Sorrow . . . 154
Hydrophobia 163
Labor (Child-Birth) . . . 44
Miscarriage, or Abortion . . 244
Toothache from Congestion of Blood 225
Toothache from increased sensibility of the nervous system 225
Uterine Hæmorrhage . . 167

Ignatia amara. St. Ignatius Bean. (*Pulsat., Cham., Coccul., Arnica, Camph.*)
Anger . . . page 48, 49
Anus, Itching of the . . 52
Apoplexy 56
Asthma, or Spasms of the Chest 60
Cardialgia 242
Catarrhal Inflammation of the Eyes 125, 126
Congestion of Blood to the Head from Passion . . . 90
Diarrhœa from Fright . . 107
Disordered Stomach . . 215
Epilepsy 126
Excoriations 129
Eyes, Inflammation of, in newborn Children . . . 122
Fever, bilious and gastric . 138
Frost-Bite 144
Grief and Sorrow . . . 154
Hemicrania 183
Jaundice 170
Sciatica 201
Skin, Itching of the . . 201
Sleeplessness 203
Sore Throat 205
Spasms 209
Stomach, Cramp of the . . 217
Teething of Children . . 223
Vomiting from mental emotions 232

Ipecacuanha. Ipecacuanha-Root. (*Arnica, Arsenic, China.*)
Asthma, or Spasms of the Chest, page 60
Blood, Spitting of . . . 64
Bloody Urine 66
Bowels, Inflammation of the . 77
Childbed-Fever . . . 193
Cholera Infantum, or Summer-Complaint . . 84
" Morbus . . . 85
Cholerine 87
Cough 101
Delirium Tremens, or Drunkenness 103
Diarrhœa 106
Epilepsy 120
Fever, bilious and gastric . 137
" intermittent . . 136
" milliary, or Rash . 139
Hæmorrhage 165
Headache from Constipation . 157
Hooping-Cough . . . 160
Measles 182
Miscarriage, or Abortion . . 245
Poisoning by Arsenic . . . 58

Spasms . . . . page 209
Stomach, Cramp of the . 217, 218
Sun-Stroke 219
Uterine Hæmorrhage . . 166
Vomiting from vitiated Stomach 231
" from Worms . . 233
Worms 238

Jalappa. (*Camph.*)
Crying of Infants . . page 102

Jodium. Iodine. (*Starch.*)
Amenorrhœa . . . page 48

Kali carbonicum. Carbonate of potassa. (*Camph., Coffea.*)
Amenorrhœa . . . page 47
Dropsy of the Abdomen . . 112
" of the Feet and Hands 111
" of the Chest (Hydrothorax) . . . 113

Lachesis trigonocephalus. Lance Headed Viper. (*Arsen., Bellad., Nux vom., Rhus toxicod.*)
Apoplexy . . . . page 56
Dropsy of the Chest, or Hydrothorax) 113
Dysmenorrhœa, or painful Menstruation 115
Sun-Stroke 219
Worms 239

Lycopodium clavatum. Club Moss. (*Camph., Pulsat.*)
Amenorrhœa . . . page 46
Crusta Lactea 185
Excoriations 129
Itch 169
Varicose Veins . . . 230
Warts and Corns . . . 234

Mercurius solubilis. Black Oxide of Mercury.
Abscess . . . . page 43
Bleeding at the Nose . . 63
Bowels, Inflammation of the . 77
Canker of the Mouth . . 185
Catarrh, or Hoarseness . . 78
" Fever . . . 79
Cheeks, Swelling of the . 79, 80
Childbed, or Duration of Confinement 82
Cholera Infantum . . . 84
Colic from Worms . . . 95
Contusion of the Chest . . 241
Diarrhœa 106
" from Cold . . 107
Diarrhœa from Fright . page 107
Dropsy in general (Anasarca) . 111
" of the Abdomen (Aseites) 112
" of the Chest . . . 113
Dysentery 114
Earache 117
Ears, Discharge from the . 119
Felon (Whitlow, or Panaris) . 140
Fever, bilious and gastric . 138
Glands, Swelling of the . . 144
Gout 148
Grippe 153
Inflammation 168
Itch 169
Jaundice 170
Lameness, spontaneous . . 174
Liver, Inflammation of the . 178
Sore Throat 205
Small-Pox 204
Spasms 209
Tape-Worm 221
Toothache from decayed Teeth 224
Wounds 241

Mercurius sublimatus corrosivus. Corrosive Sublimate. (*White of Eggs, China, Hepar sulph.*)
Dysentery . . . page 114

Mercurius vivus. Quicksilver. (*Arnica, Bellad., Camph.*)
Abscess . . . . page 43
Apthæ, or Sore Mouth . . 53
Excoriations 129
Grief and Sorrow . . . 155
Kidneys, Inflammation of the 173
Lumbago 179
Worms 239

Mezereum. Mezeron. (*Camph., Mercury.*)
Facial Neuralgia . . page 131
Felon (Whitlow, or Panaris) . 140
Scabs of the Face in Children 130

Moschus. Musk. (*Camph.*)
Asthma, or Spasms of the Chest, page 58
Fainting 132
Headache from Irritability of the nervous System . . 157
Sleeplessness 203

Natrum muriaticum. Muriate of Soda. (*Arsen., Camph.*)
Amenorrhœa . . . page 47
Feet, Injuries of the . . 134

Leucorrhœa, or Whites . page 176
Urinary Complaints . . . 227

Nitric acid. Aqua Fortis. (*Calcarea, Hepar sulph.*)
Frost-Bite . . . page 144
Sweating of the Feet . . 135

Nux vomica. Vomit Nut. (*Acon., Camph., Coffea, Pulsat.*)
Anger . . . page 48, 49
Anus, Itching of the . . 50
Apoplexy 56
Apthæa, or Sore Mouth . . 53
Asthma, or Spasms of the Chest 59
Bloody Urine 66
Blood, Vomiting of . . . 65
Cardialgia 242
Catarrh-Fever 79
" or Hoarseness . . 78
Catarrhal Inflammation of the Eyes . . . page 124, 126
Child-Birth, or Labor . . 44
Childbed-Fever . . . 193
Cholera Infantum . . . 84
Cold in the Head . . . 87
Colic from Flatulence . . 95
" from Hæmorrhoids . 96
" during Menstruation . 97
Congestion of Blood to the Abdomen . . . 92
" of Blood to the Chest 90
" of Blood to the Head 88, 89
Corns 94
Constipation 92
Contusion of the Chest . . 242
Cough 100
Crying of Infants . . . 102
Delirium Tremens . . . 103
Diarrhœa from disordered Stomach 108
Disordered Stomach . . 213
Dysmenorrhœa . . . 115
Fatigue 133
Fever, bilious and gastric . 137
" Intermittent . . . 136
" milliary 140
Flatulency 141
Frost-Bite 143
Gout 151
Greediness 155
Grippe 153
Headache from Constipation . 156
" from Dissipation and Loss of Sleep . 156
" from Irritability of the nervous System 157
Hemicrania 182
Hiccup . . . . page 159
Jaundice 170
Kidneys, Inflammation of the 172
Liver, Inflammation of the . 177
Loins, Pain in the . . . 178
Lumbago 179
Mania a potu 104
Miscarriage, or Abortion . . 245
Night-Mare 187
Offensive Breath . . . 188
Palpitation of the Heart . . 158
Rheumatism 196
Sciatica 200
Sleeplessness 202
Spasms 210
Stomach, Cramp of the . 216, 217
Teething of Children . . 222
Toothache from Congestion of Blood . . . 225
" from increased Sensibility of the nervous System . . 225
Urinary Complaints . . 227
Vomiting from vitiated Stomach 231
" from Worms . . 233
Womb, falling of the . . 237
Worms 239

Opium. White Poppy. (*Camph., Calc. carb., Hep. sulph.*)
Amenorrhœa . . . page 46
Apoplexy 56
Child-Birth, or Labor . . 44
Congestion of Blood to the Head from Fright 90
Constipation 92
Diarrhœa from Fright . . 107
Epilepsy 120
Fainting 132
Fright 142
Headache from Constipation . 157
Mania a potu 104
Night-Mare 187
Palpitation of the Heart . . 158
Sleeplessness 203
Spasms 209
Sun-Stroke 209

Petrolcum. Rock-Oil. (*Aconite, Nux vom.*)
Frost-Bite . . . page 144

Phosphorus. Phosphorus. (*Camphora, Coffea, Nux vom.*)
Abscess . . . . page 43
Croup 100
Dropsy of the Feet and Hands 111

Erysipelatous Inflammation and Swelling of the Breasts, page 71
Grippe 154
Lungs, Inflammation of the . 181
Measles 182

Phosphoric acid. PHOSPHORIC ACID. (*Camph., Coffea.*)
Diarrhœa from Fright . page 107
Fever, bilious and gastric . 138
Grief and Sorrow . . . 154
Self-Pollution 189
Spasms 212

Platina. PLATINA. (*Pulsatilla.*)
Amenorrhœa . . . page 46
Chlorosis, or Green Sickness . 152

Psoricum.
Itch . . . . . page 169

Pulsatilla. MEADOW ANEMONE. (*Cham., Coffea, Ignat., Nux vom.*)
Amenorrhœa . . . page 46
Anger 48, 49
Apoplexy 56
Asthma 58
Bleeding at the Nose . . 62
Breasts, gathered . . . 68
Catarrh 78
Catarrhal Inflammation of the Eyes 125, 126
Cheeks, Swelling of the . . 79
Child-Birth 44
Childbed-Fever . . . 193
Chlorosis 152
Cold in the Head . . . 87
Colic from wet Feet. . . 95
" from Hæmorrhoids . . 96
" during Menstruation . 98
" from Overloading the Stomach 96
Constipation 93
Contusion of the Chest . . 241
Corns 94
Cough 100
Diarrhœa from Fright . . 107
" from disordered Stomach 108, 109
Disordered Stomach . 214, 215
Dysentery 114
Dysmenorrhœa . . . 115
Earache 118
Ears, Inflammation of the . 119
" Discharge from the . 119
Eyes, Inflammation of, from a Stye 123
Fatigue 133
Fever, bilious and gastric, page 137
" milliary. . . . 139
Flatulency 141
Frost-Bite 143
Hæmorrhage 165
Headache from Constipation . 157
" from Congestion of Blood to the Head 156
Hemierania 183
Jaundice 170
Kidneys, Inflammation of the 172
Leucorrhœa 175
Liver, Inflammation of the . 177
Lumbago 179
Measles 182
Milk-Fever 184
Offensive Breath . . . 188
Palpitation of the Heart . . 159
Rheumatism 196
Sleeplessness 202
Sore Throat 205
Spasms 210
Stomach, Cramp of the . . 217
Toothache from Congestion of Blood 224
Urinary Complaints. . . 227
Varicose Veins . . . 230
Vomiting from Cramp of the Stomach . . 233
" from vitiated Stomach 231
" from Worms . . 233
Weaning 235
Worms 239
Wounds 240

Rheum palmatum. RHUBARB. (*Camph., Cham., Nux vom.*)
Crying of Infants . . page 102
Diarrhœa from Fright . . 107

Rhus toxicodendron. POISON OAK. (*Bellad., Bryonia, Camph., Coffea, Sulphur.*)
Bruises . . . . page 73
Corns 94
Crusta Lactea 185
Erysipelas 121
Fatigue 133
Feet, Injuries of the . . 135
" Sweating of the . . 135
Fever, milliary . . . 140
Frost-Bite 144
Gout 149
Loins, Pain in the . . . 178
Lumbago 179
Milk-Fever 184
Rheumatism 195
Ring-Worm 197

Scald-Head . . . page 198
Sciatica 200
Scrofulous Inflammation of the Eyes 127
Sore Throat 207
Sprains 212
Toothache from Cold . . 224
Varioloid 229
Weaning 235

Ruta graveolens. Garden Rue. (*Camph.*)
Bruises . . . . page 73
Feet, Injuries of the . . 135

Sabadilla. (*Camph., Puls.*)
Tape-Worm . . . page 221

Sabina. Savine. (*Camph.*)
Miscarriage, or Abortion . page 245
Tape-Worm 221
Uterine Hæmorrhage . . 166

Sambucus nigra. Elder. (*Arsenic, Camph.*)
Cold in the Head . . page 88
Fright 142
Sudden Attacks of Asthma in Children 61

Sanguinaria canadensis Tincture. Blood-Root. (*Arsenic, Camph.*)
Warts and Corns . . page 235

Sarsaparilla. (*Camph.*)
Scabs of the Face in Children, page 130

Secale cornutum. Ergot of Rye. (*Camph., Opium.*)
Labor, or Child-Birth . page 44.

Sepia succus. Inky Juice of the Cuttle-Fish. (*Acon., Vinegar.*)
Amenorrhœa . . . page 47
Crusta Lactea 185
Dropsy of the Abdomen, or Ascites 112
Excoriations 129
Fatigue 133
Felon (Whitlow, or Panaris) . 140
Leucorrhœa, or Whites . . 175
Miscarriage, or Abortion . . 245
Offensive Breath . . . 188
Ring-Worm 197
Urinary Complaints . . 227
Womb, Falling of the . . 237

Silicea. Silex. (*Camph., Hepar sulph.*)
Abscess . . . . page 43
Erysipelatous Inaflammation and Swelling of the Breasts . 71
Excoriations 129
Felon (Whitlow or Panaris) . 140
Urinary complaints . . . 227
Worms 239

Spigelia anthelmintica. Pink-Root. (*Camph., Aurum,*)
Dropsy of the Chest, or Hydrothorax . . . page 113

Spongia marina tosta. Burnt Sponge. (*Camph.*)
Croup . . . . page 99
Goitre 151

Stannum. Pure Tin. (*Coffea, Pulsatilla.*)
Epilepsy . . . page 120

Staphysagria. Stavesacre. (*Ambra, Camph.*)
Anger . . . . page 49
Fever, bilious and gastric . 138
Grief and Sorrow . . . 154
Scald-Head 198
Spasms 212
Stye 124

Strammonium. Thorn-Apple. (*Bellad., Nux vom.*)
Epilepsy . . . . page 120
Hydrophobia 163
Urinary Complaints . . . 227

Sulphur. Brimstone. (*Aconite, Camph., Merc., Nux vom., Puls.*)
Abscess . . . . page 43
Amenorrhœa 47
Anus, Itching of the . 51, 52
Apthæ, or Sore Mouth . . 53
Bowels, Inflammation of the . 77
Catarrh 78
Catarrhal Inflammation of the Eyes 125
Chlorosis or Green Sickness . 152
Congestion of Blood to the Abdomen 92
Crusta Lactea 185
Delirium Tremens . . . 103
Diarrhœa 106
Dropsy of the Abdomen . . 112
Earache (Otalgia) . . . 118

Eyes, Inflammation of, in newborn Children . page 122
" Inflammation of, from the Presence of foreign Bodies 123
" Inflammation of, from a Stye 124
Excoriations 129
Fever, milliary 139
Frost-Bito 144
Headache from suppressed Perspiration 158
Itch 169
Jaundice 170
Kidneys, Inflammation of the 173
Leucorrhœa, or Whites . . 176
Offensive Breath . . . 188
Pleurisy 190
Ring-Worm 197
Scabs of the Face in Children 130
Scrofulous Inflammation of the Eyes 127
Skin, Itching of the . . 201
Specks on the Eye . . . 128
Summer-Complaint, or Cholera Infantum 85
Tape-Worm 221
Ulcers on the Extremities . 226
Vaccination 228
Varioloid 229
Walk, Children learning to . 234
Worms 239

Sulphuric acid. Oil of Vitriol. (*Pulsatilla.*)
Disordered Stomach . page 215

Symphytum officinalis. Comphrey.
Bruises . . . . page 73

Thuya occidentalis. Tree of Life. (*Camph.*)
Frost-Bite . . . page 143

Tinctura sulphuris. (*Aconite, Camph., Merc., Puls.*)
Bloody Urine . . . page 66
Boil, or Furunculus . . . 66
Breasts, gathered . . . 69
Canker of the Mouth . . 185
Ears, Discharge from the (Otorrhœa 118
Frost-Bito 143
Gout 151
Itch 169
Measles 182
Scald-Head 198
Ulcers on the Extremities . 226
Varicose Veins . . . 230

Valeriana officinalis. Valerian. (*Bellad., Camph., Coffea.*)
Anus, Itching of the . page 52
Gout 147
Tape-Worm 221
Vomiting from Worms . . 232

Veratrum album. White Hellebore. (*Acon., Arsenic, Camph., Coffea, China, Merc.*)
Amenorrhœa . . . page 47
Anger with Fright . . . 50
Cholera Asiatica . . . 86
" Infantum . . . 84
" Morbus . . . 85
Cholerine 87
Diarrhœa from Fright . . 107
Dysmenorrhœa . . . 115
Epilepsy 120
Facial Neuralgia . . . 131
Fatigue 133
Greediness 155
Poisoning by Arsenic . . 58

Viola tricolor. Pansy. (*Camph.*)
Scabs of the Face in Children, page 130

Zincum metallicum. Pure Zinc. (*Camph., Hepar sulph.*)
Epilepsy . . . . page 120

A TREATISE

ON

ANATOMY AND PHYSIOLOGY,

BY

W. P. ESREY, M. D.

WITH THIRTY ILLUSTRATIONS.

Anatomy and Physiology.

The growing interest manifested in all classes to become acquainted with the structure and formation of the human organism is sufficient excuse if any be needed for the introduction of some general remarks on anatomy and physiology into a work of this kind. It is indeed important that those laymen who occasionally prescribe for disease should have some acquaintance with these subjects, to enable them to discriminate with greater accuracy between different morbid conditions, and to distinguish really dangerous symptoms from those of but little consequence.

No pretension is made to originality of matter in the preparation of this treatise, but the best standard text-books on the subjects have been freely consulted; and the chief aim has been to condense into a small compass as much useful matter as possible, though from the very limited space to be occupied, and the wide field to go over, the information on many points must necessarily be brief and imperfect.

The subjects being very intimately allied—*Anatomy* being the science which investigates the structure and organization of living beings, *Physiology* the science which treats of the actions or functions peculiar to living organized beings while in health —it has been thought best to consider them together, rather than under separate heads, as is done in all the more systematic treatises.

Comparative Anatomy treats of the *structure* of the lower orders of animals.

Comparative Physiology considers the *functions* of the inferior animals.

Vegetable Physiology treats exclusively of plants. It is to *Human Anatomy* and *Physiology* that this treatise will be principally devoted.

The substances in nature are divisible into two chief classes: —the *organized*, or those which possess separate parts or organs

suited for the performance of certain actions or functions, and the *inorganic*, or such as are without this arrangement. The former includes animals and vegetables, the latter the earths, metals, &c. All organized bodies have their origin from parents; they must spring from beings like themselves, and they are controlled by *vitality*, or the *principle of life*. The several separate organs have a mutual dependence on each other, and to preserve the harmony of the whole, the integrity of each part must be preserved.

Organized bodies have likewise a definite *shape* and *size*, and an allotted time to live; and after death they are decomposed, and pass into the simple combination of the inorganic elements.

Inorganic bodies, on the contrary, do not spring from parents; they are not born; but they have their origin in, and are governed by certain fixed and invariable natural laws. The particles of which they consist are in a state of aggregation only. And their growth, or increase of size, or change of shape, takes place by the accretion of matter to their surfaces. The parts of which an inorganic body is composed are all alike in structure and properties, and may exist as well in detached portions, or when broken in pieces, as in large masses. And each body consists wholly of matter, either in the solid, liquid, or gaseous form.

Organized bodies, on the other hand, are always composed of a combination of solids and fluids; they differ in character and properties, and are arranged into organs, so as to form of the whole a single system.

They also increase in size by a process called nutrition, which consists in imbibing substances from without, and changing them, by means of internal organs, to their own nature.

In respect to the *chemical* character of inorganic and organic bodies, great difference exists. All the substances considered elementary, amounting to about sixty, are found in the mineral kingdom. In the organized, only a few of these elements are met with—about seventeen—and of these but four are considered essential, viz. carbon, hydrogen, oxygen, and nitrogen; two of which, at least, will be found in every organic compound. The

other simple elements exist in smaller quantities, and may be considered non-essential: they are, sulphur, phosphorus, chlorine, sodium, calcium, potassium, magnesium, silicon, aluminum, iron, manganese, iodine, and bromium. The last two are found principally in marine plants and animals. The composition of inorganic bodies is more simple, some consisting of but one element; and when composed of more the combination rarely exceeds three. Organized bodies, on the contrary, in most instances consist of three or four elements; the simplest vegetable consists of a union of oxygen, carbon, and hydrogen; and the simplest animal of oxygen, hydrogen, carbon, and nitrogen.

As both animal and vegetables are included under the head of organized bodies, it is necessary to point out some of the distinctive characters between these kingdoms. Nutrition, or the capacity of assimilating foreign matters to their own substance for purposes of development and growth, and reproduction, or the power of producing a living being similar to themselves, are properties common to each. Besides these there are other properties peculiar to animals, and hence called *animal* properties or functions. These are *sensation* and *voluntary motion*.

Though plants are not destitute of motion—their roots seeking the most nutritious soil; the leaves and branches turning spontaneously to the light; the internal circulation of the sap; and some, as the sensitive plant, even seem to perform movements almost indicative of sensibility—yet these are quite different from the motions of animals, not being the result of consciousness. They result from physical changes produced directly in the part of the plant touched, and strictly organic; and are indications of *irritability*, but not of *sensibility*. A distinction is to be made between these qualities. In the lower orders of animals, indeed, the distinction is more difficult; naturalists having been for a long time undecided whether the zoophites—sponge, coral, &c.—should be considered as animals or vegetables. They are as firmly attached to the soil as the latter, and like them receive their nourishment from without. Some species of plants, on the other hand, as the *Fucus natans*, or gulf weed, lives and fruc-

tifies on the water, and are constantly borne about by the waves. This motion, however, is very different from that of animals; it is entirely passive.

Animals likewise differ from vegetables very materially with respect to *nutrition*. In the former a stomach is necessary, in order to receive the food, which is generally crude and unfitted for absorption, and prepare it for the nutrition of the individual by a process termed digestion. The nourishment of plants is derived from inorganic substances, from the excretions of animals, and from decaying organic matter, while animals can only be nourished by organized substances, either animal or vegetable. The absorption of nutritive matters by the latter is from without, by means of the roots; that of the former from within, by vessels situated in the lining membrane of the alimentary canal.

Differences also exist in the functions of reproduction; in the animal, volition is required in almost every stage of the process; in vegetables, on the contrary, the whole is effected without the exercise of volition or consciousness.

The proportion of fluids to solids is, likewise, much greater in animals than in vegetables, which accounts for decomposition taking place much sooner in the former than in the latter.

All organized bodies are composed chiefly of carbon, oxygen, hydrogen, and nitrogen, with alkaline and earthy salts. Vegetables mostly consist of the three first of these elements, and nitrogen is combined with them in the animal only. Or, when this latter element is found in vegetables, it is in limited quantity, and generally confined to one part. It is this difference of composition which gives to animal substances the peculiar smell when burning by which they are readily distinguished from vegetables.

Elementary Composition of Man.

The human body is composed of fluids and solids; the blood, chyle, lymph, and the various secretions constitute the former; and the various textures, as the bones, muscles, viscera, &c., the latter. Water is one of the most important constituents of the

human body; it is in large proportion in all the fluids, and also in the solids, and gives to the latter softness and flexibility.

The proportion of fluids is far greater than that of the solids, being in the proportion of six or nine to one, according to the estimate of different observers, it being exceedingly difficult to arrive at an exact estimate. *Chaussier* found a dead body which weighed one hundred and twenty pounds; after being dried in an oven, it weighed only twelve. And a perfectly dry mummy in the possession of *Blumenbach*, which contained all the viscera, weighed but seven pounds and a half.

There exists in organic structures a class of compounds, called *proximate principles*, or *organic elements*, which consist of two or more of the elementary substances, combined in definite proportions.

The chief of these are: albumen, caseine, fibrine, gelatine, chondrine, elaine, stearine, margarine, hæmatosine, and globuline.

Albumen.—Is found in two forms, *fluid* and *concrete;* the former, which is met with in the white of egg, is colorless and transparent, without smell or taste, and is coagulable by heat, acids, and corrosive sublimate; it is found in the blood, lymph, and chyle. The latter, concrete or solid albumen, is white, tasteless and elastic; it is insoluble in water, alcohol, or oil, but readily soluble in alkalies; it is found in the brain, spinal cord, and nerves, and in the mucous membranes. Hair, nails and horn, also, consist principally of albumen. It is one of the most common of the organic constituents.

Caseine.—Exists abundantly in milk, and is the basis of cheese. It may be obtained by allowing milk to remain at rest till it is coagulated, taking off the cream, then washing the clot in water and drying it. It is readily coagulated by the action of *rennet;* this is owing to the pepsin contained in the latter. Caseine is white, insipid, and inodorous, insoluble in water, but readily soluble in the alkalies, ammonia especially. It contains sulphur. It has many properties analogous with albumen.

Fibrine.—This principle exists in the chyle, lymph, and blood, in solution; it also forms the basis of the muscles, where it is

found in the solid form, and is one of the most abundant of the animal substances. It may be obtained by beating blood with a stick as it is flowing from a vein, or by washing a clot repeatedly in clean water so as to dissolve out the coloring matter.

Fibrine is solid, white, flexible, and slightly elastic, insipid, inodorous, and heavier than water; it is insoluble in water, alcohol, and acids, but soluble in caustic potassa. Chemically speaking, it does not differ essentially from albumen; the chief variation is physiologically, in the spontaneous coagulation of the fibrine; in coagulating, the fibres assume a definite arrangement, crossing each other in all directions. It constitutes the buffy coat of the blood. In the reparation of injured parts it is thrown out from the blood vessels as a secretion, and becomes organized. It is often called coagulable lymph under such circumstances.

Gelatine.—Is the chief ingredient of the cellular tissue, skin, tendons, cartilages, and ligaments; it also enters largely into the composition of bones. It may be obtained by boiling any of these substances for some time in water; clarifying the concentrated solution; allowing it to cool, and then drying the substance obtained in the air. When dry and hard, it is called *glue;* in a liquid form *jelly*. Gelatine is soluble in hot water, in acids and alkalies. It is insoluble in cold water, alcohol and ether, and has a strong affinity for tannin. The process of tanning leather results from the combination of tannin with gelatine. The air-bags of fishes consist of pure gelatine, known as isinglass. The article known as portable soup consists of dried gelatine seasoned with spices. Under the form of *glue* and *size*, gelatine is extensively used in the arts, its adhesive properties rendering it valuable.

Chondrine.—Resembles gelatine, but does not unite with tannin, and is precipitated by acetic acid, acetate of lead, alum, and protosulphate of iron. It is obtained by boiling the cartilages, and allowing the solution to cool.

Elaine, *stearine*, and *margarine*, are the proximate principles of fat. The first is fluid at ordinary temperatures; the second is fluid, and is the chief ingredient of vegetable and animal suet,

and of fat and butter; it is but sparingly present in human fat. The third is of medium consistency.

Hæmatosine—Is the red coloring matter of the blood, contained in a capsule which is composed of *globuline*.

There are other organic elements, called *secondary* organic compounds, as *urea*, cholestrine, pepsine, sugar of milk, &c., which are excretions of particular organs. They will be treated of under the head of secretions.

Of the *inorganic*, *ultimate*, or *chemical elements* it has been already remarked that oxygen, hydrogen, carbon, and nitrogen, are the most essential. Besides these there are phosphorus, lime, sulphur, iron, manganese, silicum, chlorine, sodium, magnesium, &c.

Oxygen—Is distributed throughout nearly all the solids and fluids. It is indispensable to life, and a supply is constantly furnished from the atmosphere. It is mostly found combined with other bodies, often with carbon in the form of carbonic acid.

Hydrogen —This gas is found universally distributed throughout the animal kingdom. It is contained in all the fluids and in most of the solids, and is generally in combination with carbon. It has been found pure in the intestines, as well as combined with carbon and sulphur.

In the form of sulphuretted hydrogen gas, it has an offensive smell. The flatulence emitted from the intestines mostly consists of this combination.

Carbon.—Is met with in both fluids and solids in various forms. Generally it exists under the form of carbonic acid. It is emitted by all animals in the act of expiration. In animal bodies it mostly exists in combination with alkalies, or earths, though it has been found uncombined.

Nitrogen.—Exists extensively in animal substances. Its prevalence is so general that it frequently serves as a test to distinguish them from vegetables. It is this principle that gives to animal substances their peculiar smell when burning.

Phosphorus—Occurs in combination with oxygen—*phosphoric acid*—in many animal substances, both solids and fluids. Com-

bined with earthy matters this acid forms one of the chief ingredients of bones. It is likewise combined in other parts with potassa, soda, ammonia, and magnesia.

Calcium or *lime*, is found in the state of oxide of lime only in animals. It is generally in the form of phosphate or carbonate. This earth constitutes the hard parts of animals, as bone, &c.

Sulphur—Is sparingly met with in animal fluids and solids, and is always combined with oxygen, and united to lime, soda, or potash. In the lower part of the intestines, and also as an exhalation from fetid ulcers, it is met with in the form of sulphuretted hydrogen gas.

Iron—Is found in the blood; in bile and in milk. It is the coloring matter of the red globules of blood.

Manganese.—This substance has been found along with iron in the ashes of the hair in a state of oxide.

Silicum.—Exists in the hair and urine.

Chlorine.—Is contained in most of the animal fluids; it is generally combined with hydrogen, forming muriatic acid which is united with soda. *Muriatic acid* in a free state also exists in the stomach.

Sodium.—As an oxide soda is found in all of the fluids. It is likewise united to albumen. Most frequently, however, it is combined with the phosphoric and muriatic acids; sometimes also with the lactic, sulphuric, and carbonic acid.

Potassium—Is likewise found in animal fluids united with acids. It is, however, more abundant in vegetables.

Magnesium—Exists in the form of an oxide, *magnesia*, sparingly in the bones, and in some other parts. It is always combined with phosphoric acid.

Out of the *proximate principles* described, the various tissues of the human body are formed. The different solid parts are arranged in a variety of ways: and of these the principal are in *filaments*, or elementary fibres, *tissues*, *organs*, *apparatusses*, and *systems*.

By a *filament* is understood the elementary solid, consisting of minute particles of matter arranged in a row.

A *fibre* consists of a number of filaments united together and enclosed in a sheath.

By the term *tissue* is generally meant a particular arrangement of fibres.

Organs are formed by the union of tissues—the liver, stomach, &c., are examples.

An *apparatus* consists of the union of several different organs to accomplish one end—as the biliary apparatus, consisting of the liver, gall bladder, &c., all of which aid in the secretion of food.

A *system* is composed of a number of similar organs, united for one end—as the muscular or nervous system.

Anatomists define a solid to be, a body the particles of which adhere to each other, so that they will not separate by their own weight, but require the application of some external force to effect disunion. And they likewise divide the various solids of which the human body is composed, into the following varieties, viz. bone, cartilage, muscle, ligament, vessel, nerve, ganglion, follicle, gland, membrane, cellular membrane, and viscus.

Bone.—This is the hardest of the solids, and forms the skeleton, serving as a protection to various important organs and for attachments to muscles.

Cartilage.—Ranks next to bone in hardness; it is white and elastic, covers the articulating extremities of bone to facilitate their movements; it serves also in some cases, as in the ribs, to prolong the bones; in the fœtus it is a substitute for bone There are several varieties of cartilage.

Muscles.—What is called flesh in animals consists of muscles. They are the agents of all movements, and are composed of bundles of red and contractile fibres, extending from one bone to another.

Ligaments.—Are cords or bands, exceedingly tough and difficult to tear. They serve to connect different parts to each

other, as the bones and muscles. By some they are divided into two varieties—those which connect the joints, and those attached to the muscles,—the tendons and aponeuroses.

Vessels.—These are in the form of canals or tubes, and serve to carry on the circulation of the various fluids. And are called sanguineous, chyliferous, lymphatic, &c., according to the nature of the fluid they carry.

Nerves.—The nerves are solid cords consisting of numerous fasciculi or bundles. They are connected with the brain, spinal marrow, or great sympathetic, and their function is to convey impressions to the nervous centres; and to endow each part with vitality. There are two chief divisions of nerves—those of the brain and spinal marrow, and the organic or great sympathetic.

Ganglions.—A ganglion is a knot situated in the course of a nerve and formed apparently by an interlacing of filaments. The term is likewise applied to a similar interlacing of lymphatic vessels.

Follicles or crypts.—Are small membranous vesicles seated in the substance of the skin or mucous membrane.

Their office is to secrete a fluid to lubricate these parts. It is the secretion from these follicles chiefly that keeps the skin soft, and gives to it its oily character.

Glands.—Are likewise secretory organs, but differ from the follicle—their organization being more complicated. The liver, for instance, is a gland, and its office the secretion of bile. The glands of the human body are numerous and diversified in their character.

Membrane.—The membrane is formed by the cellular tissue, and is one of the most important and extensive substances of the body. It is spread out like a web, and serves to form, support, and envelope all the organs, to line the cavities and reservoirs. It is divided into simple and compound. The simple being again subdivided into three varieties, viz. the *serous*, *mucous*, and *fibrous*. The first of these, the serous, form all the sacs or closed cavities of the body—as those of the chest and abdomen. The compound membranes are formed by the union of the sim-

ple, and are divided into *fibro-serous*, *sero-mucous*, and *fibro-mucous*. The pericardium is an example of the first of these; the gall-bladder of the second; and the ureter of the third.

Cellular or *laminated tissue.*—This is a kind of spongy or areolar structure, which encloses all the solids, fills up the spaces between them, serving at the same time as a bond of union and a medium of separation. It will be more fully described presently.

Viscus.—The name viscus is given to those solids which are the most complicated, both as regards texture and use. The brain, lungs, liver, &c., are examples.

The *tissues* have been variously classified: the classification of *Haller*, which reduces them to three primary ones, has been very generally adopted by anatomists and physiologists. These are the *cellular* or *areolar*, the *muscular*, and the *nervous*, out of which all the organs are formed, either from the first alone, or by the union of the last two.

1. *The cellular* or *areolar tissue.*—This tissue is the most simple and abundant of the solids; it exists in all organized beings, and is an element in every solid, with the exception perhaps of the enamel of the teeth, where it has not as yet been detected. It is formed by the interlacing and crossing of numerous fibres or bands, of a delicate whitish color, so as to leave numerous interstices, or areola, which communicate with each other. A proof of this is furnished in anasarca or general dropsy, where the excess of fluid passes readily from one part to another; and by pressing with the finger, the fluid is forced into adjoining parts of the membrane, and a pit is formed which gradually disappears again on removing the pressure. They may also be filled with air, as occurs occasionally in the disease called emphysema; and it is a knowledge of this fact that enables butchers to inflate or *blow* their meat, to give to it a fat appearance. This membrane possesses elasticity and extensibility, but not much vitality; it is composed chiefly of gelatine. During life the interstices are filled with a dilute serous or watery fluid,

which passes from the blood-vessels. It is the excess of this fluid caused by disease that constitutes anasarca or general dropsy.

2. *Muscular tissue*—Consists of an arrangement of exceedingly minute fibres or filaments of a peculiar substance. These fibres are arranged in parallel layers in all the voluntary muscles and a few others; in the involuntary, including those of the alimentary canal, bladder, uterus, &c., they interlace. They are soft, of a grayish or reddish color, and possessed of contractibility or irritability, that is, they move responsive to chemical and mechanical irritants. They are composed principally of fibrine.

Nervous tissues.—This tissue or fibre is of a pulpy consistence; it is composed essentially of albumen united to a fatty matter, and is the organ of sensibility, or for receiving and conveying impressions to the mind. The brain, nerves, &c., are composed of it, and it is not near so generally distributed as the preceding. The ultimate nervous fibre or filament is said to be ten or twelve times larger than that of muscle.

These three varieties of tissues or fibres, by uniting in different proportion, from the first order of solids; and these again by union constitute compound tissues, out of which the various organs, glands, bones, &c., are formed. Thus, for instance, a bone is composed of several tissues, the body being *osseous*, the interior *nervous*, the extremities *cartilaginous*, and the exterior *fibrous*.

The primary form taken by organic matter, as it passes from the state of a proximate principle to that of an organized structure, appears to be a cell; this cell contains another within it, called *nucleus*, which again contains a granular body, called *nucleolus*. Almost all the organic tissues, however unlike, are in the embryo composed of cells which are afterwards developed by a vital process into the various structures that make up the perfect being. Cells in great numbers are found floating in the blood, chyle and lymph, and their development goes on during the life of the organism.

Physical and vital properties of the tissues.—The tissues pre-

sent striking differences, as well in their properties, as in their anatomical arrangement. These properties are divided into *physical* and *vital*. The physical belong as well to the dead as to the living tissue, and are dependent altogether on the particular arrangement or mode of cohesion of their constituent particles and their chemical composition. The vital properties are those which belong exclusively to the *living* organism, and which terminate with organic life.

The most marked of the physical properties are: *elasticity*, *flexibility*, *extensibility*, and *porosity*.

Elasticity is that power by which a tissue reacts after the withdrawal of an extending or compressing force. It is manifested in the yellow ligament, in the middle coat of the arteries, and in the cartilages of the ribs, and the articular faces of the bones.

Extensibility. — Tissues may be extensible without being elastic; those which are so yield only to long continued pressure; an example of this is furnished in the resistance of fibrous membranes to the growth of a tumour.

Flexibility, or the capability of being bent, is witnessed in the white fibrous tissues, which are flexible, and not elastic nor extensible. The tendons are examples.

Porosity.—The tissues even after death are porous, that is, they are permeable by watery fluids. This property is also termed imbibition. The softness of tissues is owing to the watery fluids which fill their pores.

The vital properties of tissues.—These properties which belong only to organic life, manifest themselves by a change of their molecules or elementary constituents, from the application of a stimulus. This change may take place directly, with a visible alteration of the tissue impressed, or indirectly through the intervention of some other organ or tissue with which the impressed tissue may be in connection.

There are two tissues which have these properties, viz. the muscular and the nervous. In nerves it is manifested in three ways: 1) by causing contraction in the muscle supplied by it; 2) by inducing contraction in muscles not supplied by it, through

a change in the nervous centres with which it is connected; 3) by exciting sensation.

When seated in *muscle* it is called contractility, and is characteristic of that tissue. Hence there are *two* vital properties,—*sensibility* and *contractility*—the first, seated in the nervous tissue, the second in the muscular. Vegetables having no nervous system cannot be sensible, as this property requires a brain, a particular part of the nervous system, for its exercise. The only *vital* property, therefore, which belongs both to animals and vegetables is better expressed by the term *excitability* or irritability. Plants are not *sensible;* being without consciousness, they are *irritable.* Muscles, when removed from the body, are likewise *irritable,* and not sensible. Physiologists have variously termed this one *vital property,* irritability, excitability, contractility, or incitability.

Of the Bones.

Anatomists generally reckon two hundred and eleven bones in the human skeleton, though the number varies, they being more numerous in youth than in old age; some bones which in the young consist of several pieces, as life advances become united by the ossification of the intervening cartilages. Bones are of a dull white color, hard, and inflexible; by boiling and proper preparation they may be made of an ivory whiteness; when held together by their natural connection of ligaments and cartilages they form a *natural* skeleton; when joined by wires, or other means, an *artificial* skeleton.

The regional division of the skeleton is into the head, trunk, the superior, and the inferior extremities. Twenty-two bones belong to the head, fifty-six to the trunk, sixty-nine to the superior, and sixty-four to the inferior extremities.

The bones are classified as long, thick and flat bones, and are either symmetrical, that is, they consist of two lateral portions exactly alike; or else are in pairs, which have a perfect correspondence with each other.

The symmetrical bones are, the frontal, occipital, sphenoidal,

ethmoidal, vomer, inferior maxillary, hyoid, the spinal, and the sternal; all of these are placed in the middle vertical line of the body. The pairs are situated on both sides of the middle line.

The long bones are generally cylindrical or prismatic; the shaft of a long bone is called dyaphysis; its extremities, which are generally enlarged for the purposes of articulating with other bones, epiphyses.

The eminences and projections on the surfaces of bones are called apophyses; they are numerous, and serve for the origin and insertion of muscles, and for articular faces.

The small *foramina*, or holes, on the surfaces of bones serve for the transmission of blood-vessels; the largest is mostly about the middle.

Structure of bones.—The density of bones, though always considerable, and greatly exceeding that of any other part of the body, is variable; being different in different bones, and also in the same bone. This has led to the division of their substance into *compact* and *cellular*, the former being external, the latter internal. The cellular structure grows from the inner surface of the compact, and is composed of filaments and small lamina, or plates, radiating in every direction. The cells resulting from this arrangement communicate with each other, and are filled with marrow. This structure increases the strength without increasing the weight, and also diminishes the effect of concussion, as a fall, blow, &c.

Development of bones.—In the development of bones three stages of ossification are apparent in the embryo. The first is the mucous or pulpy stage, which continues for one month; the second is the cartilaginous, and the third the osseous which commences about the third month. Up to this period the vessels convey lymph only; subsequently they convey red blood to a central point (point of ossification), and there is a deposit of calcareous particles. Most of the bones are formed of several pieces, for each of which there is a distinct point or centre of ossification. These pieces gradually coalesce and form one bone. Bones increase in length by continued deposit at their extremities between

the diaphysis and epiphysis, and in thickness by external deposit and by secretion from the periosteum. The latter is proved by the experiment of feeding a young pig on food colored with madder. By suspending and resuming this mode of feeding, alternate lamina of white and colored bone will be produced.

Composition of bones.—All the bones are composed of the same elementary constituents; the relative proportion of these constituents, however, is not always the same. They consist of earthy and animal matters, united generally in the proportion of two parts of earthy to one of animal. Or according to minute chemical analysis they are composed of 32 parts of gelatine, 1 part of insoluble animal matter, 51 parts of phosphate of lime, 11 of carbonate of lime, 2 of fluate of lime, 1 of phosphate of magnesia, and 1 of soda and muriate of soda.

The earthy matter is most abundant in the bones of the head; the animal matter in the cellular structure. In advanced age, and in some forms of disease, the proportion of earthy matter is also increased.

The animal matter may be removed by combustion, and the bone will then be quite white and friable; the original form, however, will be preserved. Immersing a bone in dilute acid will remove the earthy matters, owing to their strong affinity for acids; in this state the animal part remaining is cartilaginous, flexible, and elastic.

Periosteum.—The periosteum is a dense, white, fibrous membrane, which covers the surface of the bones; it adheres with less tenacity in infancy than in adult age. In old age it becomes ossified; it is vascular, and possesses but little sensibility in health; its office is to assist in the secretion of the external laminæ of bone; to protect it against suppuration in the vicinity, restrain the deposit of bone within proper limits, receive the insertion of muscles, tendons, &c.

The delicate vascular membrane, lining the cells, canals and cavities of bone is termed the *internal periosteum*. It contains *marrow*, a substance resembling fat, but of finer consistence. In protracted chronic diseases the marrow is absorbed and its place

supplied with serum. It, therefore, would seem to be like fat—a reservoir of nutriment.

Bones are supplied with arteries, veins, lymphatics, and nerves.

Formation of callus.—After a bone is fractured, nature sets to work to repair the injury, and the development of the medium of union, called callus, somewhat resembles the primitive formation of bone. From the vessels ruptured about the seat of the injury blood is at first effused; this is gradually absorbed, and meanwhile coagulating lymph is effused. This coagulates and ossifies in the form of a ring around the broken bone, the thickest part being directly over the seat of the fracture; and also in the form of a pin in the interior of the bone. The extremities of the broken bone now begin to unite or *knit* together, and after this is effected, the superfluous bony matter (the ring and pin) being no longer of any service, are absorbed. They act merely as splints. It is of the utmost importance that the parts be kept at rest whilst this process is going on, otherwise the ossification may be arrested, and a crooked limb, or even a false joint, result.

Bones of the Trunk.

The trunk is formed by the spine, the thorax and the pelvis.

The spine.—The spine extends from the head to the lower part of the pelvis at the posterior part of the trunk. It is formed of 28 or 29 distinct bones called vertebræ, and contains a bony canal for the spinal marrow. It has several curves; in the neck it is convex anteriorly, and concave behind; in the thorax concave anteriorly and convex behind; in the loins convex in front and concave behind; and in the pelvis concave in front and convex behind. Of the 28 or 29 pieces of which it consists, 24 are considered as *true vertebræ* on account of their mobility, and the remainder—5—not being movable, are called *false vertebræ*. They are divided into 7 for the neck, called cervical; 12 to the thorax, called dorsal; and 5 to the loins, called lumbar; the *false* and the sacrum, and 3 or 4 coccygeal bones, situated at the inferior extremity of the column.

A vertebræ consists of a body, 7 processes or extremities, and a canal or foramen for the reception of the spinal cord. The *body* is in front, and in shape is somewhat ovoid; it is convex anteriorly, and concave behind; its surfaces above and below, articulate with a contiguous vertebræ by means of a cartilage, and it is the thickest part.

The *processes*, or extremities, are four *oblique*, which articulate with corresponding ones from the vertebræ above and below; two *transverse*, one projecting on either side from between the oblique processes, and which serve for the attachment of muscles and ligaments; and one *spinous* process, which is placed in the middle of the bone behind, and which also serves for the attachment of muscles.

Cervical vertebræ.—The first of these is called the atlas, on account of its supporting the head; it has no body, but presents the appearance of a large irregular ring, thickest at the sides. In place of a body it is supplied with a bony arch which is occupied by the processus dentatus of the second vertebræ. The *oblique* processes are peculiar, the two above are large, oblong and concave, to suit the condyloid processes of the occipital bone with which they articulate. The two lower ones are round, flat, and horizontal, adapted to the rotary motion of the head.

The second is called *dentata*, from its tooth-like process projecting from the upper surface of the body. The head rotates on this process, which is kept in its place by the transverse ligament of the neck—an exceedingly strong ligament extending across the atlas and attached to a tubercle on each side of that bone. This process is smooth in front where it touches the arch of the atlas, and likewise behind where the transverse ligament plays. The spinous process is long and forked.

The remainder of the cervical vertebræ, except the last, do not require special description; their bodies are small, flattened in front, and gradually increase in size as they descend. The *spinous* processes are short, thick, horizontal, and bifed or forked. The *oblique* processes are flat, oval, and short. The *transverse* processes are broad, and have a foramen at their base for the pas-

sage of the vertebral artery. The foramen for the spinal cord is very large.

The *spinous* process of the sixth vertebræ is long and terminated by a sharp point. The seventh is the largest and looks like a dorsal vertebræ; its body is larger than that of the others, and its spinous process is the longest of all, and is not bifurcated, but terminates by a rounded tubercle easily felt under the skin. The foramen at the base of the transverse processes is too small to receive the vertebral vessels.

Dorsal vertebræ.—The dorsal vertebræ situated intermediate between the neck and loins, are also inferior in point of size. They are 12 in number. Their bodies are cylindrical, their transverse diameter decreases from the first to the third, and then regularly decreases to the last. They have articular marks on the sides for the heads of the ribs. These marks or pits, except in the first and the eleventh and twelfth, are each formed by two contiguous vertebræ. The *first* has a complete pit in its side for the head of the rib. The *eleventh* and *twelfth* have also complete fossæ or pits for the ribs. The *oblique* processes are vertical, the two upper looking backward, and the two lower forward. The *transverse* processes are long and terminate in an enlarged extremity, which has an articular face in front for the tubercle of the rib. The *spinous* processes are long, triangular, and broad at the base, sharp-pointed, somewhat rough and swollen at the extremities, and overlap each other.

Lumbar vertebræ.—These are five in number. Their bodies are larger than those of the other *true* vertebræ, oval, and have the transverse diameter the longest. The spinal foramen is triangular, and larger than in the dorsal vertebræ. The groves for the nerves to pass out are likewise large. The *oblique* processes are vertical; the superior looking inwards and the inferior looking outwards. The *transverse* processes are very long, and stand out at right angles. The *spinous* processes are short, thick, quadrangular, horizontal, and terminate by an oblong tubercle. The lumbar vertebræ increase in size successively—the first is the smallest, and the fifth the largest; the body of the latter is

also wedge-shaped. The third has the longest transverse and spinous processes.

Sacrum.—The os sacrum is much the largest bone in the spinal column. It forms the upper and posterior boundary of the pelvis; it is triangular in shape, with the base above, and originally consist of five bones, bearing a strong resemblance to vertebræ; hence they received the name of false vertebræ; The anterior face of this bone is smooth and concave, and has four holes on each side, which communicate with the spinal cavity and transmit the anterior branches of the sacral nerves. Its posterior face is convex and rough, and is equally divided by its spinous processes. The marks of the original separation of this bone are evident, particularly on its front surface. The base has an articular mark to receive the last lumbar vertebræ: the *apex* is below and has an articular surface for the coccyx. The *sacral* canal, a continuation of the spinal, runs through the length of the sacrum. The portion of the spinal cord lodged within it is called the cauda equina, from its fancied resemblance to a horse's tail.

Coccyx.—The coccyx, like the sacrum, is triangular; it has its base upwards, and is flat. It consists of three or four bones united in the same curve as that of the sacrum. These pieces as life advances become joined together by bone, and also joined to the sacrum; so that all the false vertebræ, from the base of the sacrum to the point of the coccyx, are united into a single bone. The coccyx forms the lower extremity of the spinal column, and corresponds with the tails of animals.

The vertebral column affords a secure lodgment to the spinal marrow, is a line of support to the trunk in every position, and is the centre of all its movements. In the erect posture, the spine also supports the head.

The motions of the spine are, flexion or bending forward, extension or bending backward, lateral bending and circumduction, or that motion in which the trunk is caused to describe a cone, the base of which is above, and the apex below.

The first of these motions, flexion, is the most extensive; it

is produced mainly by the action of the abdominal muscles. In this position the inter-vertebral, elastic, cartilages are compressed in front, and thickened behind, the anterior vertebral ligament is relaxed, and the posterior vertebral ligament correspondingly tense.

Extension or backward bending is very limited, owing to the mechanical obstruction offered by the spinous processes of the back and neck, which are very near to and overlap each other. The abdominal muscles also strongly resist it. The muscles, arising either from the back of the pelvis or from the transverse processes, and going upwards to be inserted either into the ribs, the transverse or spinous processes, which produce this motion, act less advantageously than do the abdominal muscles in producing flexion; the leverage in the latter case being much more favorable.

The lateral inclination of the spine is considerable, it is favored by the advantageous position of the muscles on the side of the neck and trunk, as well as by the mechanical arrangement of the parts; the transverse processes being so far apart as scarcely to offer any resistance. The principal obstruction is presented by the ribs, which strike against each other when this motion is carried too far.

Circumduction is performed chiefly on the lower dorsal and the lumbar vertebræ, and is a succession of the movements above described.

The rotation of the spine is very limited; it is performed chiefly on the lower dorsal and upper lumbar vertebræ, and consists of a series of oblique motions of the body of one vertebræ upon another. In old age, when the inter-vertebral substance has become hardened, it is almost inappreciable.

The rotation of the head is effected by the motion of the atlas upon the dentata, which is the only motion allowed to this vertebræ, flexion and rotation being prevented by the confinement of the transverse ligament behind, and by the anterior bridge of bone in front. The flatness of the articular surfaces of the two bones likewise prevent any lateral motion.

Pelvis.—The bones of the pelvis are the sacrum, the coccyx, and the two innominata or hip bones; the two first, which form the posterior boundary, have already been described.

Innominatum.—The innominatum is a large flat bone, and is the hip or haunch bone of common language; it has some resemblance to the figure 8. From having originally consisted of three pieces, though these pieces unite in the cavity of the hip joint (acetabulum), and in the adult leave but a slight trace of their former distinction, anatomists divide the innominatum into the ilium, ischium, and pubes.

Ilium.—This is the largest of the three pieces, and forms the upper rounded part of the innominatum, or the wall of the upper pelvis. It is the hip bone. Externally its surface is convex and rough, with a semi-circular ridge crossing it; the glutei muscles arise from this surface. Internally it is concave; the anterior portion is smooth and gives origin to the iliacus internus muscle; the posterior is rough and articulates with the sacrum, behind which arise muscles and ligaments. The margin, called the crista or spine of the ilium, is curved and somewhat resembles the italic *f*. In front of the crista there are two eminences or projections, one of which is called the anterior superior spinous process, and the other the anterior inferior spinous process; the former gives origin to the sartorius and tensor vaginæ muscles and Poupart's ligament; the latter to the rectus muscle; the cavity between the two gives origin to the gluteus medius. A large prominence called ilio-pectineal is situated below these processes; in a groove above this, the iliacus internus and psoas magnus pass.

The posterior margin of the ilium is marked by two projections called posterior superior, and posterior inferior spinous processes. Just below the latter there is a deep excavation called sciatic notch, through which the pyriform muscle, the sciatic nerve, and several blood-vessels pass out. The *crista* has three lips, the internal of which gives origin to the transversalis muscle, the middle to the internal oblique, and into the external the external oblique is inserted.

Ischium.—This portion of the innominatum is the most inferior and is the next in size to the ilium; it consists of a body and ramus or branch. The external surface of the body is rough; the internal surface is smooth, and is called the plane of the ischium. On the posterior margin there is a projection called the spine, into which the lesser sacro-sciatic ligament is inserted; beneath the spine there is a groove in which the tendon of the obturator internus muscle plays. The inferior portion of the body is called the tuberosity of the ischium; it gives origin to the biceps adductor, semi-membranosus and semi-tendinosus muscles; in front there is a long ridge into which the great sacro-sciatic ligament is inserted. The ramus is short and thick, and ascends forward and inward to join the ramus of the pubes, and form a part of the pubic arch; it is rough externally, and smooth internally; the crus of the penis arises from the latter face.

Pubis.—This bone is much the smallest of the three, and constitutes the anterior boundary of the pelvis. It consists of a body and two branches, one of which runs downwards to join the ischium, and the other backwards and upwards to join the ilium. The body is joined to its fellow by a flat surface, called the symphysis; the superior portion of the body is horizontal at right angles with the symphysis, and is bounded outwardly by a projection, called the spinous process. From this process two ridges proceed outwardly; the posterior, is called the crista of the pubes, or linea pectinea, and to it is attached a part of Poupart's ligament. Between these two ridges is a triangular space from which the pectineus muscle arises, and over which the femoral vessels pass. The extremity of the superior ramus is triangular, and much enlarged where it contributes to form the *acetabulum*, a hemispherical concavity for the articulation of the femur. At the bottom of this cavity there is a rough depression occupied by a mass of fat generally called a gland of Havers. The obturator or thyroid foramen is the large opening in the lower part of the bone. In shape it is mostly oval; it is filled up, with the exception of a groove in the upper part to transmit the obturator vessels and nerve, by a membranous ligament.

As a whole, the pelvis is a conoidal cavity, having its base above, and its apex below. Internally it forms an irregular floor for the support, in the erect position, of the abdominal viscera. Externally its projections furnish favorable points for the attachment of muscles. There are marked differences in the male and female pelvis. The diameters of the latter are larger, and the depth less than in the male. The, arch as it is called, under the symphysis pubis, is regularly rounded in females; in males, on the contrary, it is merely an acute angle. The sacrum also, in women is shorter, more concave, and of greater breadth.

Thorax.

The thorax is the upper part of the trunk, and in shape is conoidal, flattened in front, and concave behind; it is formed by the dorsal vertebræ behind, by the sternum in front, and at the intermediate spaces by the ribs.

The superior part, or apex, of the cone presents a heart-shaped opening, and is much smaller than the base; the latter has a large notch in front, into which the lower end of the sternum projects.

Fig. 1.

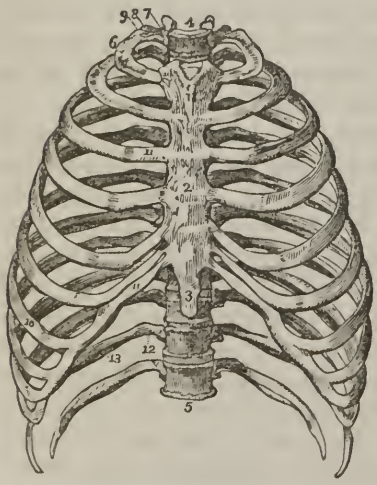


Fig. 1. A representation of the thorax; 1, 2, 3 bones of the sternum; 4, 5 first and last dorsal vertebræ; 6, 10 angle of ribs; 11 cartilages.

Sternum.—This bone is placed in the middle and front of the thorax, and is oblong and slightly curved; its direction is also slanting, the lower part receding much farther from the spine than the upper. The concavity is in front. In the adult it is usually composed of 3 pieces; an upper, middle, and lower, which are held together by cartilages and ligaments. Frequently in

advanced life these pieces are fused together and form but one bone.

The *first* or upper bone is the thickest, and has an irregular square figure; the upper margin projects somewhat, and is slightly scooped out. On each side are marks for articulating with the clavicle, and first and second ribs.

The *second* or middle bone is longer and narrower than the first; the lower part increases somewhat in breadth, and then terminates by being rounded off on either side. The sides of this piece present pits for the articulation of part of the second, the third, fourth, fifth, sixth, and part of the seventh ribs.

The *third* bone of the sternum in young persons is very often wholly cartilaginous, and is called the zyphoid or ensiform (sword-shaped) cartilage. It is thin, and varies very materially in shape in different individuals. The extremity is mostly pointed, and inclined slightly forwards; sometimes it is forked, and sometimes also turned backwards.

Ribs.—There are twenty-four ribs in all, twelve on either side; the upper seven, from their cartilages articulating with the sternum are called the sternal or *true* ribs; the lower five in consequence of their cartilages stopping short of the sternum are called *false* ribs.

In some rare cases there have been eleven or thirteen ribs on a side.

The ribs are parallel, and directed obliquely downwards and forwards; each having a parabolic curve, and gradually increasing in size to the eighth, and afterwards gradually diminishing. The surface of each rib is convex externally, and concave internally; the anterior or sternal extremity is larger and flatter than the posterior; the vertebral or posterior extremity of the rib is its head, and presents two articular surfaces separated by a ridge. Surrounding the head the rib is very narrow, and called the neck. Near the vertebral extremity is an oblique ridge caused by the insertion of the sacro-lumbalis muscle; just at this line a curve, somewhat abrupt, takes place, which is the angle of the rib.

The upper margins of the ribs are rounded, and somewhat

rough for the insertion of the intercostal muscles; the inferior margins have a thin cutting edge, just with and above which is a groove running two-thirds of their length, which contains the intercostal vessels and nerve. Each rib is twisted and bent, the spinal extremity being directed upwards, and the sternal extremity downwards. About an inch from the head of each rib is a tubercle, or prominence, for articulating with the transverse processes of the vertebræ; just beyond this is a smaller tubercle for the insertion of the external transverse ligament.

The *first* rib is small, and more circular than the other; it is flat above and below.

The *eleventh* and *twelfth* are not connected with the others, and are thence called floating ribs; they have no tubercles, and but one articular surface on the head.

The thorax performs two important offices in the human economy—first it protects the organs of circulation and respiration, and second, it assists in the function of respiration. Its structure affords a very secure defence to its viscera, from the effect of blows on the outside. Posteriorly the spinal column, and the masses of longitudinal muscles which fill up the gutters on each side of the spinous processes furnish, ample protection. In front the protection is less secure, in consequence of the sternum being placed immediately under the skin. The effects of blows, however, on this part are much diminished by the elasticity of the cartilages, and by the oblique downward direction of the ribs themselves; both of which circumstances dispose the sternum to retreat backward, and to yield to the impelling force. The arched form of the thorax is likewise a favorable one to enable it to resist the force of blows, &c.

The thorax aids respiration by expanding and contracting; the expansion takes place in three directions, vertically, transversely, and antero-posteriorly, or from back to front. In the vertical direction the augmentation is effected by the diaphragm; it is much more considerable in adults than in children, owing to the viscera of the abdomen being comparatively larger in the latter. In the other directions the dilatation is accomplished

chiefly by the action of the intercostal muscles, which contract successively—beginning at the first rib which serves for a fixed point—and elevate the ribs. The obliquity of the ribs and the attachments of their cartilages to the sternum, which have to ascend in order to reach it, allow of this augmentation. While the enlargement is going on the sternum is slightly elevated and projected forwards.

In expiration all the diameters of the thorax are diminished, all its movements being directly the reverse of those which take place in inspiration. The chief cause of expiration is atmospheric pressure upon the external walls of the thorax, acting in conjunction with the natural elasticity of the lungs. Some slight aid is also furnished by muscular contraction and the elasticity of the cartilages.

Bones of the Head.

In the head there are twenty-two bones, which are divided into those of the cranium—eight in number,—and those of the face—fourteen in number.

Cranium.

The cranium is composed of one frontal, two parietal, two temporal, one sphenoid, and one ethmoid bone.

The frontal bone is situated in front of the cranium; the occipital bone is at its hind part; the two parietal bones, one on each side, form its superior lateral part; the two temporal also, one on each side, its inferior lateral part; the sphenoid is situated at the middle of its base; and the ethmoid also at its base, and just in front of the body of the latter bone.

Frontal Bone.—This bone forms the forehead of common language; it is symmetrical and shell-like, and is occasionally divided into two parts by a suture, continuous with that, dividing the parietal bones. The *external* surface is convex, and the internal concave. About the middle of the external surface on each side is a protuberance called the frontal, which is the original centre of ossification. The *internal* surface is concave, and

marked by numerous depressions, corresponding with the convolutions of the brain. Near the middle and lower margin of the external surface is a ridge called the nasal, or superciliary protuberance; just below this there is a protuberance called the nasal spine, which serves for an abutment to the nasal bones. At the inferior margin of the bone on either side are the two orbital ridges, which form the anterior boundary of the eye. These ridges are terminated outwardly by the external angular processes, and inwardly by the internal angular processes. The lachrymal gland is placed in a depression just within the external angular process.

The frontal sinuses consist of one or more large cells placed beneath the nasal protuberances; they vary very much in size, and in some rare instances in the adult do not exist.

This bone unites laterally with the parietal and sphenoid; and below with the ethmoid and several of the bones of the face.

Parietal Bones.—These, as stated, occur in pairs and form the middle, superior and lateral portions of the cranium; they are quadrangular, convex externally, and concave internally. About the middle of the external surface the bone is raised into the parietal protuberance—the centre of ossification. Immediately below this is a semi-circular ridge for the attachment of the temporal fascia and muscle. *Internally*, the surface of the bone is marked by the convolutions of the brain, and contains also a number of furrows, produced by the middle artery of the dura mater. The superior margin is the thickest, and much serrated; when joined to its fellow it forms a deep groove for the accommodation of the longitudinal sinus. The inferior edge is thinner and arched. This bone articulates with its fellow, with the frontal, the sphenoid, the temporal and the occipital bones.

Occipital Bone.—This bone is placed at the posterior and inferior part of the head, and is of an oval or trapezoidal shape; it is convex externally and concave internally. Both surfaces contain a number of ridges and processes A large opening, called the foramen magnum, is found in its lower part. This hole is oval, the long diameter extending from before backwards;

it transmits the medulla oblongata, the vertebral vessels, and the spinal accessory nerves. On each side is an oblong convex surface, called condyloid process, for articulating with the atlas. Near the middle of the external surface of the bone is a prominence, called the external occipital cross, from which, on each side, there proceeds a semi-circular ridge, which serves for the origin and insertion of muscles. About an inch below this ridge is another, into which the superior oblique muscle is inserted. In front of the foramen magnum is the basilar process, the extremity of which joins the sphenoid bone. The internal surface is likewise marked by a cross near its centre, called the internal occipital cross, which is more prominent than the external; from this cross three groves diverge, which contain the two lateral and the superior longitudinal sinus; inferiorly a ridge proceeds to the foramen magnum to which the falx cerebelli is attached. In this way four concavities are formed, the two superior of which contain the posterior lobes of the cerebrum, and the two inferior the hemispheres of the cerebellum.

Superiorly the occipital bone joins the parietal, laterally the temporal, and in front the sphenoid.

Temporal Bones.—These bones are placed on either side of the cranium, below the parietal, and form portions of its inferior lateral parieties and base. They are divided into three portions, the squamous, the mastoid, and the petrous.

The *squamous* portion is thinner than the other bones of the cranium, but is covered by the temporal muscle, which affords sufficient protection to the brain. Externally it is slightly convex, and has grooves for the deep temporal artery. The zygomatic process projects from its lower part, and forms a part of the zygomatic arch. Beneath the base of this process, which is triangular, is the glenoid cavity for the articulation of the lower jaw. Just behind this cavity is another, which contains a portion of the parotid gland. Between these cavities is the Glasserian fissure, which transmits the chorda tympani nerve, and the levator tympani muscle, to the ear. The internal surface has a groove for the middle artery of the dura mater.

The *mastoid* portion is behind, and is thick and cellular; its upper part is angular, has serrated edges, and is received between the parietal and occipital bones. Below there is a large conical projection, called mastoid process, which receives the insertion of sterno-mastoid and trachelo-mastoid muscles. At the base of this process is a fossa from which the digastric muscle arises. A foramen, called the mastoid, and which transmits a blood-vessel, is found near the upper margin of the bone.

There are numerous and large cells in this portion of the bone, which are called sinuses; they communicate with the tympanum by a large orifice.

The *petrous* portion is triangular and pyramidal; it arises by a broad base from the inner portions of the mastoid and squamous portions; its structure is extremely dense and brittle. In the posterior surface of the petrous portion is a large foramen, called the meatus auditorius internus, through which the seventh or auditory, and the facial nerves are transmitted. The base has a large oval opening, between the zygomatic and mastoid processes, which leads to the tympanum, and is called the meatus auditorius externus; its margin is called the auditory process, its lower part is rough for the attachment of the cartilage of the external ear. In the angle between the squamous and petrous portions is the orifice of the Eustachian tube. The styloid process, which is round, tapering, and about an inch and a half long, projects from a ridge on the inferior surface, called the vaginal process. Immediately behind the base of the styloid process is the stylo-mastoid foramen, through which the facial nerve and stylo-mastoid artery pass. The internal jugular vein, and the eighth pair of nerves pass through the posterior foramen lacerum, which is formed by the articulation of this with the occipital bone. Just before the foramen lacerum is the opening of the carotid canal, which contains besides the artery the ganglion of Laumonier.

The temporal bone articulates with the occipital, the parietal, the sphenoid, and the malar.

Sphenoid Bone. — This bone is placed transversely in the

middle of the base of the cranium. In shape it bears resemblance to a bat; it consists of a body and four wings, two, a large and a small one, being placed on each side. The body is in the centre, and is cuboidal in shape. Besides the wings mentioned it has a number of angular margins, and additional processes, two of the latter are directed vertically downwards. A deep depression exists on the superior surface of the body, which is called the sella turcica, and contains the pituitary gland. On either side of this depression are two grooves, called sulci carotica, for the carotid arteries; in front is a prominence, called processes olivaris, upon which is a groove, indicating the position of the chiasm of the optic nerves. The posterior clinoid process projects over the depression behind. In front of the body is a ridge, which articulates with the nasal lamella of the ethmoid bone, on either side of this are the orifices of the two sphenoidal cells; these empty into the posterior ethmoidal cells, and do not exist in infancy. The posterior surface of the body is flat, and rough for articulating with the cuneiform process of the occipital bone. Generally in the adult the bones are anchylosed at this point.

The small wings are in front of the large, and are triangular, flat, and narrow. Their posterior extremities form the anterior clinoid processes, and are perforated by the optic foramen, which transmits the optic nerve and ophthalmic artery. They articulate with the frontal bone.

The great wings are divided from the small, by the sphenoidal fissure or foramen, through which pass the third, fourth, first branch of the fifth, and the sixth nerves; it has three surfaces. One is anterior, and called orbital, from its forming a part of the orbit; another is external and called temporal; the third, towards the brain, is concave, and contains a considerable portion of the middle lobe of the cerebrum; its face is marked by the convolutions of the brain, and by a furrow for the passage of the middle artery of the dura mater to the cranium. The temporal surface is somewhat concave, and covered by the temporal and external pterygoid muscles. The orbital face is square

and slightly concave. The inferior portion of the great wing is elongated backwards, and called the spinous process. From the point of this process the styloid process projects downwards.

The sphenoid bone articulates above and in front with the vomer, the frontal, ethmoid, malar, and parietal bones; behind with the occipital, and by its pterygoid processes with the palate bones; and laterally with the temporal.

Ethmoid Bone.—The ethmoid bone, so named from its resemblance to a sieve, is placed at the base of the skull and between the orbitar processes of the frontal. In shape it is cuboidal, and in structure extremely cellular and light. The superior surface is called the cribriform plate, and is perforated with holes which transmit filaments of the olfactory nerve. From the middle line of this surface, a narrow, triangular, hollow process projects called the crista galli, to which is attached the falx cerebri. A vertical plate of bone, called the nasal lamella, divides the bone longitudinally into two halves; it articulates posteriorly with the crista sphenoidalis, and below with the vomer.

The lateral surfaces of the bone are called ossa plana; they are extremely thin and form a large portion of the orbits of the eyes. Attached to the internal face of the os planum on either side of the nasal lamella are two scrolls or shells placed one above the other, and called superior and middle turbinated bones. They are separated by a fissure which is the superior meatus of the nose. The middle meatus is between the middle and inferior turbinated bones. The anterior ethmoidal cells empty into the middle meatus; the most anterior of them is funnel shaped and receives the fluid from the frontal sinus. The posterior ethmoidal cells and the sphenoidal sinus empty into the superior meatus.

The ethmoid articulates with the frontal, sphenoidal, inferior turbinate, superior maxillary, nasal, lachrymal, palate bones, and vomer.

Bones of the Face.

The face is composed of fourteen bones viz. the superior maxillary, the palate bone, malar, nasal, unguiform, inferior tur-

binated, vomer, and inferior maxillary; all of these except two, the inferior maxillary and vomer, are in pairs, there being six on either side. The inferior maxillary bone has corresponding or symmetrical sides.

Superior Maxillary Bones.—These constitute the upper jaw and are the largest bones of the face; they articulate with all the others except the lower jaw. They have an irregular cuboidal body, and four processes. The body is hollow, and has four surfaces. The anterior or facial surface is bounded above by the lower margin of the orbit, below which is a foramen, the infra orbitar, which transmits the infra orbitar nerve and an artery. The posterior or temporal surface is round; it has a roughened prominent part, called the tuber, through which pass by several small foramina, the posterior dental nerve, artery, and vein to the floor of the antrum. The superior or orbital surface is triangular. The internal or nasal surface has a large opening of the antrum highmorianum—the large cavity in the centre of the bone. The walls of this cavity are grooved by the passage of the dental nerves.

The nasal process arises by a broad and thin base from the upper and anterior part of the bone; it articulates anteriorly with the nasal bone, and superiorly with the frontal; the posterior edge forms a canal, by articulating with the os ungus, to contain the lachrymal sac.

The malar process is on the upper and outer surface of the bone; it is rough and articulates with the malar bone.

The alveolar process, contains the sockets of the teeth, eight to each side; it is broader behind than in front. Just behind the alveolar process, at the junction of the two bones, is the foramen incisivum which contains the naso-palatine nerve and ganglion.

The palate process arises from the internal face of the body of the bone, just within the circle of the alveoli; it forms the horizontal roof of the mouth, and floor of the nose. The nasal crista arises at the junction with its fellow and articulates with the vomer. Behind, this process unites with the horizontal part

of the palate bone; its anterior extremity forms the anterior nasal spine.

Palate Bones.—These bones, two in number, are placed between the superior maxillary and the sphenoid bones. They are irregular in shape, and divided into two portions.

The horizontal, or palate plate, is square, and in the same line with the palate process of the superior maxillary bone, forming a part of the floor of the nostril and roof of the mouth. At its suture it forms part of the nasal crista for articulating with the vomer. Behind, it is elongated into the posterior nasal spine.

The vertical or nasal plate forms the posterior and outer part of the nostril, and is much thinner than the palate plate; its nasal surface articulates by a ridge with the inferior turbinated bone; externally it articulates by a roughened surface with the maxillary bone. Posteriorly it has an elongated triangular process, called pterygoid.

The orbital portion, or plate, is hollow and irregular; it forms a small part of the orbit between the ethmoid and superior maxillary bones.

The palate bone articulates with the upper maxillary, the sphenoid, ethmoid, inferior spongy, the vomer, and with its fellow.

Nasal Bones.—These are placed between the nasal processes of the superior maxillary bones; they are oblong in shape, and compact in structure, and so placed together, as to form a strong arch, called the bridge of nose. The upper extremity is thick and narrow, and articulates with the frontal bone. The lower is thinner and broader, and has the cartilages of the nose attached. They articulate with each other, with the nasal processes of the superior maxillary, and with the frontal bone.

Unguiform Bones.—So called from its resemblance to a finger nail, likewise called lachrymal. It is placed at the internal side of the orbit, between the nasal process of the upper maxillary, and the os planum of the ethmoid, and is very small and thin. The external surface forms a part of the orbit of the eye. It

articulates loosely with the frontal, upper maxillary, os planum, and the inferior spongy bone.

Malar Bones.—The malar or cheek bones, two in number, are quadrangular in shape. They are situated at the external part of the orbit of the eye, and form the prominence of the cheek. The cheek bone has three surfaces; the external or facial, which is convex, and forms part of the face; the internal or orbital, which is crescentic, and contributes to the orbit; and the posterior, which is concave, and forms the anterior boundary of the zygomatic fossa. It has four margins, two of which are superior, and two inferior. The anterior of the upper is curved to form the external and part of the inferior margin of the orbit; the posterior upper is irregular, and has attached to it the temporal fascia. The anterior inferior is serrated, and articulates with the upper maxillary; the posterior inferior serves for the origin of a part of the masseter muscle. The angles of this bone are called processes, the superior or frontal articulates with the angular process of the frontal bone. The temporal process extends backwards, and forms part of the zygomatic arch; the maxillary articulates with the upper maxillary bone.

The malar bone articulates with the maxillary, frontal, sphenoidal, and temporal bones.

Inferior turbinated Bones.—These, also, called spongy bones, are situated immediately below the opening into the antrum Highmorianum. They are scroll-like, and extremely light and porous. The internal surface is convex, and looks towards the nose; the external surface has a broad hook which rests upon the lower margin of the orifice of the antrum and partly closes it. Two processes arise from the superior margin of the bone, and join the ethmoid. The lower margin is thicker than the upper.

Vomer.—Called so from its resemblance to a ploughshare. It is a single bone placed between the nostrils, and forms a large part of the septum. It is formed of two plates of compact structure. It is flat, has four margins, and is frequently more inclined to one side than the other. The superior margin is the

thickest and contains a groove for the reception of the azygos process of the sphenoid; the inferior margin articulates with the nasal crista of the upper maxillary and palate bones; the anterior margin is directed obliquely downwards and forwards, its front half joins the cartilaginous septum of the nose, and its posterior half unites with the nasal lamella of the ethmoid; the posterior margin is concave, sharp, and thin, and divides the posterior opening of the nose.

Inferior Maxillary.—This bone, commonly called the lower jaw, is also single. It forms the lower boundary of the face, and is the only bone in the head capable of motion. Its shape is that of a parabolic curve. In infancy its halves are separable, being joined in the middle only by cartilage; two or three years after birth, however, they become consolidated, and the cartilage disappears. It consist of a body or region which corresponds with the teeth, and two rami or branches.

The body is convex in front, having its upper part formed by the alveolar cavities for receiving the teeth, and its lower part presenting a thick and rounded margin, which is the base of lower jaw. At the middle or symphysis is a triangular prominence, called the anterior mental tubercle. Near to this tubercle, on either side, there is a large hole, called the anterior mental foramen, which conducts the inferior maxillary artery and nerve to the teeth.

The internal or posterior face is concave, and has also a prominence at its symphysis, called the posterior mental tubercle; a fossa exists on each side of this tubercle for the insertion of the digastric muscle. Exterior to this on either side is a larger fossa for the sublingual gland.

The alveolar processes are thin with cutting edges; and contain sockets for sixteen teeth. They come and go with the teeth; it is the absorption of these processes, after the loss of the teeth, in aged persons, and the consequent falling in of the mouth that gives to the chin its prominent appearance.

The ramus or extremity of the lower jaw is square, and elevated above the body. In middle age it is at right angles to

the latter, and in youth and old age oblique. The superior margin has a thin, concave edge, and is bounded in front by the coronoid, and behind by the condyloid process. The first of these processes is triangular and thin, and receives at its point the insertion of the temporal muscle; the second articulates with the glenoid cavity of the temporal bone, and is attached to the ramus by a narrow neck on the inside of which is a fossa for the insertion of the external pterygoid muscle. Externally the surface of the ramus is rough; internally there is a foramen for conducting the inferior alveolar artery and nerve to the teeth. The junction of the body and ramus is the angle of the jaw; it is rough for the attachment of the stylo-maxillary ligament.

The lower jaw has a greater influence on the form of the face than any of the other bones. In some persons it is much smaller in proportion than in others. The inclination of the alveolar processes externally or internally, frequently cause the chin to recede or project unusually. At times, also, the separation of its sides, shorten the chin, and give increased width to the lower part of the face.

General Remarks on the Head.

In the adult the bones of the head consist of two tables, one external, and the other internal. The external table is hard and fibrous, the internal thinner and more brittle, and hence has received the name of vitreous table.

These tables are united by a cellular bony substance, called *diplœ*, which is traversed by channels, filled with veins having delicate parietes, and provided with valves, and which like all other veins are intended to return the blood to the heart.

They empty at the base of the brain into the emissaries of Santorini.

The bones of the cranium are united by seams or *sutures* which, except in old age, are very distinctly marked. They are formed by the junction of the edges of the bones, which are serrated or notched, and accurately and firmly fitted into each

other. Indeed, in some of the sutures uniting the flat bones of the head, a complete dove-tailing is, here and there, met with.

This kind of union is often confined to the external table and to the diploe, whilst in the internal table the bones are united by a nearly straight joint.

The principal *sutures* of the head are: the *coronal*, so named from its corresponding in situation with the garlands, worn by the ancients, which unites the parietal and frontal bones; the *saggital*, which unites the *two parietal* bones in the adult, and in the child extends through the frontal bone to the root of the nose; the *occipital*, or lambdoidal, uniting the parietal and occipital bones, and also the latter to the temporal bones—the latter half is sometimes called the additamentum suturæ lambdoides; and the squamous which joins the parietal and temporal bones on either side of the head. One or more small bones are often met with in the upper part of the lambdoidal suture, attached to the parietal and occipital bones by serrated margins; they are called *Ossa Wormiana*, or *Triquetra*.

Besides these sutures, which belong exclusively to the head, there are others uniting the bones of the face.

Much speculation has been entered into in regard to the *uses* of the sutures; they appear, however, to be only a provision for the growing state, as they cease when this terminates. In the fœtus they are often serviceable in facilitating delivery, by permitting the head of the child to accommodate itself to the pelvis of the mother.

The *Fontanelles*.—These are membranous spaces peculiar to the fœtus and to early infancy. They are owing to a deficiency of bone at their angles of junction.

In the bones of the cranium the points of ossification beginning at the centre, and going towards the circumference, the angles, being the longest radii, are last in ossifying. Hence they are generally incomplete at birth. The fontanelles are six in number, two on the middle line of the head above, and two on either side. The *anterior*, known in common language as the "opening of the head", is the largest. It is quadrangular

or lozenge shaped, the anterior angle generally being the longest, and is situated at the fore part of the sagittal suture. The *posterior* fontanel is situated at the junction of the lambdoidal and sagittal sutures; it is small and triangular, of the two fontanelles on either side, one is at the angle of junction of the temporal, occipital, and parietal bones; the other at the junction of the parietal and sphenoid bones. They are quite small and often indistinct. All of these fontanelles ossify speedily after birth, and are often entirely closed by the end of the first year.

Nasal cavities.—These cavities are large and irregular; they are divided by the nasal septum. Each nostril or cavity has three distinct passages, or *meatuses*, as they are sometimes called —a superior, a middle, and an inferior. The superior meatus is bounded by the superior and middle turbinated bones; the posterior ethmoidal and sphenoidal cells, and the spheno-palatine foramen open into it. The middle is between the middle and lower turbinated bones, and has opening into it, the anterior ethmoidal cells, the frontal sinus, and generally the antrum. The inferior is bounded above by the inferior turbinated bone, and below by the floor of the nostril; it is the largest, and at its upper and anterior part is the nasal duct which communicates with the orbit of the eye. The opening of the nostrils in front is called anterior nares; the opening behind posterior nares. The mucous membrane lining the nostrils is called the Schneiderian membrane; it extends into the various cavities which empty into the nostrils, and when in a state of irritation from cold, &c., the secretions from it are often copious and exceedingly annoying.

Orbits of the Eyes.—The orbital cavities are conical, having the base outwards, and the apex backwards; they are also somewhat quadrangular. Seven bones unite in forming each orbit namely, the frontal, malar, superior maxillary, ethmoid, unguis, sphenoid, and palate bones.

The roof or superior face of the orbit is formed by the frontal and the lesser wing of the sphenoid; the floor or inferior face by the upper maxillary, malar, and palate bones; the external face by the malar and greater wing of the sphenoid; the internal

face by the unguis, or lachrymal, os planum of the ethmoid, and the body of the sphenoid.

The apex of the orbital cavity contains the optic foramen for the transmission of the optic nerve. Several other foramina for the passage of blood-vessels and nerves also open into the orbits.

The *Facial Angle.*—The bones of the face usually project beyond those of the cranium. In general the races of man that are most perfectly developed have this projection less than those of inferior conformation. The facial angle has been instituted to denote the differences in this respect. It is formed by two straight lines,—one drawn from the lower part of the frontal bone, to the anterior nasal spine, at the orifice of the nose between the roots of the middle incisor teeth of the upper jaw,—and the other from this latter point through the external meatus of the ear. The angle included between these lines has been found in Caucasian or European heads to be about eighty degrees; in the heads of the Mongolian or copper-colored races about seventy-five degrees; and in those of the Negro or Ethiopian about seventy degrees. The nearer the angle approaches to a right angle the greater is the degree of intellectual cultivation manifested. Even in Europeans, however, this rule is liable to many exceptions, the facial angle varying in its size from causes which have no connection with the development of the brain.

The *internal* surface of the cranium is regularly arched above; below it presents three deep fossæ on each side. The anterior fossæ contains the anterior lobes of the brain, the middle the middle lobes, and the posterior is for the cerebellum. The entire surface is marked by round superficial depressions made by the convolutions of the brain, and is lined by the dura mater. In adults the diameters of the cavity of the cranium are, about six and a half inches from front to rear, five inches laterally, and five vertically.

Hyoid Bone.

This is an insulated bone placed in the neck at the root of the tongue. In shape it resembles the letter *u*, and has the convexity in front. It consists of a body and four cornua or horns; the body is in the middle, is convex in front, concave behind, and is the largest part of the bone; its front gives origin and insertion to muscles; two of the cornua are called the greater, and two the lesser, the former are about an inch and a half long, and mostly united to the body by cartilage and ligaments; they are flattened, project backwards, and terminate in a tubercle. The lesser cornua are small cartilaginous bodies, three or four lines long, placed at the junction of the body and great cornua.

They are frequently found ossified; a ligament, the stylo-hyoid, is attached to each.

Upper Extremities,

This part of the skeleton is divided on either side into the shoulder, arm, fore-arm, and hand. Two bones belong to the shoulder—the scapula and the clavicle.

Scapula.—This bone, known as the shoulder-blade, in ordinary language, is placed on the back part of the thorax, and extends from the second to the seventh rib. Its shape is triangular, and it is also thin and flat, presenting two surfaces—one anterior, and one posterior; three edges or margins—one being superior, another external, and the third internal, or posterior, the latter being parallel with and near to the spinal column;—and three angles, one of which is superior, another inferior, and the third exterior or anterior.

The posterior surface or dorsum is somewhat concave, and is divided by the spine into two fossæ, of which the lower is much larger than the upper; the latter, called fossa supra spinata, is occupied by the supra-spinatus muscle, and the former the fossa infra spinata, by the infra-spinatus muscle. The spine is a rough process beginning at the posterior edge of the bone, and running obliquely across it towards the anterior angle, and terminating

in the acromion process, which is flat and triangular, overhangs the shoulder joint, and has a small articular mark in front for the clavicle. The trapezius muscle is inserted into, and the deltoid arises from, the edge of the spine.

The internal edge, that parallel to the spine, is the longest, and into it are inserted the rhomboid and serratus anticus muscle.

The superior edge is thin and small, and has a notch in it, called the coracoid notch, through which the scapular artery and nerve pass.

The external edge is thick, and gives origin to the teres minor, and the long head of the triceps muscle.

The anterior angle is converted into a large shallow cavity, called glenoid, for articulating with the head of the humerus. The long head of the biceps arises from a flat surface at its upper end. Immediately blow the glenoid cavity the bone is narrowed and thickened; this part is termed the neck, or cervix, and from it a curved process projects forwards and outwards called the coracoid. This process serves for the attachment of muscles and ligaments.

Clavicle.

The clavicle is a long bone placed transversely at the upper and anterior part of the chest. It articulates with the sternum and the acromion process of the scapula, and in shape is curved somewhat resembling the italic letter s. The sternal two-thirds of the bone is convex, and the outer third concave anteriorly; it is cylindrical in the middle, flattened at the humeral, and triangular at the sternal extremity. In males it is shorter, thicker, and more crooked than in females.

The superior face is smooth, and marked near the sternum with a depression for the origin of the sterno-cleido mastoid muscle. The inferior face is roughened near the sternum for the costo-clavicular or rhomboid ligament; near the outer extremity is a rough tubercle for the attachment of the coraco-clavicular ligament; between the ends a superficial fossa exists, for the subclavius muscle. From the sternal two-thirds of the

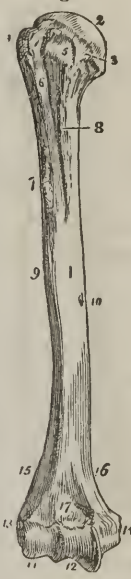
anterior edge the pectoralis major muscle arises, and from the humeral third of the same edge the deltoid has its origin. Near the middle of the *posterior* edge one or more foramina are presented for nutritious vessels.

Humerus.

The humerus, or arm-bone, is cylindrical, and extends from the shoulder to the elbow. It consists of a superior extremity, also called the head, a neck, an inferior extremity, and a body.

Fig. 2. The humerus. 1 the body; 2 the head; 3 the neck; 10 nutritious foramen; 13 external condyle; 14 internal condyle; 11 articulating face for the radius; 12 articular face for the ulna; 17 lesser sigmoid cavity. The remaining figures refer to ridges marks, &c., for the attachment of muscles.

Fig. 2.



The superior extremity or head is hemispherical, and articulates with the glenoid cavity of the scapula; immediately beneath the head, and separated from it by a groove is the neck. Below this groove are two knobs, called tuberosities, one of which is external, and the other internal; they receive the insertion of muscles, and are separated from each other by the bicipital groove, in which the tendon of the long head of the biceps muscle plays.

The inferior extremity is flat and broad, and is covered in front by the brachialis anticus muscle, and behind by the triceps. It presents a hemispherical head for articulating with the radius and an irregular cylindrical surface for the ulna. Just above the articular surface in front is a cavity, called the lesser sigmoid which receives the coronoid process of the ulna when the fore-arm is much flexed. Behind is a corresponding though larger cavity, called the greater sigmoid, for the olecranon process when the fore-arm is extended. Immediately above the articular surface for the radius, and continuous with a ridge three or four inches long is the external condyle, from which and the ridge arise the supinator and extensor muscles. The internal condyle is just above the internal margin of

the ulnar articular surface, and is more prominent than the external. It may be felt beneath the skin; from this condyle and the ridge leading from it the flexor muscles of the hand and fore-arm arise.

Bones of the Fore-Arm.

The fore-arm extends from the elbow to the hand, and contains two bones, the ulna, and radius. The ulna is on the same side as the little finger, and is the longer. Both are straight bones.

Fig. 3.

Ulna.—The ulna is somewhat triangular, and its superior or humeral extremity is the larger, and has a hook-like process—the olecranon—behind, to which is attached the triceps extensor cubiti muscle. A little below, and in front of the upper extremity is the coronoid process; the greater sigmoid cavity for articulating with the humerus is between the olecranon and coronoid processes; and on the outside of the coronoid process is the lesser sigmoid cavity for articulating with the radius. The external edge is the sharpest, and to it is attached the interosseous ligament.

Fig. 3. The ulna and radius. 1 body of the ulna; 2 greater sigmoid cavity; 3 lesser sigmoid cavity; 4 olecranon process; 5 coronoid process; 8 lesser extremity; 9 styloid process. 11 Body of the radius; 11 rounded head; 12 neck; 13 tubercle; 15 inferior extremity; 16 styloid process.

Radius.—This bone is placed on the outer side of the ulna, is shorter, and like it extends from the humerus to the wrist. It is slightly curved, and the inferior extremity is the larger.

The upper extremity has a cylindrical head, surrounded by a smooth rim or border, a part of which plays in the lesser sigmoid cavity of the ulna while the remainder is in contact with the annular ligament. On the upper surface of the head is a fossa for articulating with the humerus. Below the head is the neck which is about half an inch in length. Immediately beneath the neck is a rough prominence or tubercle for the insertion of the biceps flexor cubiti.

The lower extremity is flattened transversely. It articulates

by a concave surface with the scaphoid and lunare bones of the wrist. On the internal face of the extremity is a small articular surface for the ulna. Externally is the styloid process for the attachment of the external lateral ligament. Upon the back of this extremity are several grooves, occupied by the tendons of the muscles which go to the wrist and hand.

The body of the bone is irregularly triangular, and presents three surfaces and three angles, which are principally occupied with the origin and insertion of muscles.

Bones of the Hand.

The hand consists of the carpus or wrist, the metacarpus, and the phalanges, or digiti, and is made up of twenty-seven bones exclusive of the sesamoid bones.

Carpus.—The carpus or wrist is placed next to the fore-arm, and consists of eight bones arranged into two rows, called first and second rows. The bones in the first row are the scaphoid, lunare, cuneiform, and pisiform; those in the second row are the trapezium, trapezoides, magnum, and unciform. They are difficult to distinguish from each other.

The *scaphoides*, placed on the radial side of the wrist, is concave above, and convex below; it articulates above with the radius, below and in front with the magnum, trapezium, and trapezoides, and on the inside with the lunare. It may be known from the others in the row by its greater length.

The *lunare* is at the ulnar side of the latter, and is of a semilunar shape. Above it is convex, and below concave. It articulates with the radius above, with the magnum below, and with the cuneiform on the inside.

The *cuneiform* is placed at the ulnar side of the lunare, and is somewhat wedge-shaped. It articulates above with the lunare, below with the unciform, and on the inside with the pisiform.

The *pisiform*, so named from its resemblance to a pea, is the smallest of the carpal bones. It has but one articular surface, which joins the cuneiform, and may be readily felt at the ulnar side of the arist.

The *trapezium* is placed at the radial side of the second row, and is very irregular in shape; it articulates with the thumb, scaphoid and trapezoides.

The *trapezoides* is at the ulnar side of the trapezium, and the smallest in the second row; it is somewhat pyramidal, with the apex towards the palm, and has four articular faces for the adjoining bones.

The *magnum* is placed at the ulnar side of the last, and is the largest bone in the wrist. On the upper surface it has a rounded head to articulate with the scaphoides and lunare. The body is quadrilateral.

The *uneiform* is at the ulnar side of the magnum, and nearly as large; it may be distinguished by its long crooked process.

Metacarpal Bones.

Of these there are five; they are placed between the wrist and the phalanges of the fingers and thumb. Those for the finger are parallel with each other; but the one for the thumb diverges, and is so placed that it can be brought in front of the others during its motions. Each has a rounded head for articulating with its corresponding phalanx, a cylindrical shaft which is smaller than the extremities, and a base which articulates with the carpal bones. The *first*, that for the thumbs, is the shortest and thickest; the *second* for the index finger is the longest; the third, fourth, and fifth gradually diminish in size.

Phalangeal Bones.

Each finger contains three bones, called phalanges; the thumb has but two. The first row, that adjoining the metacarpus, is called the first phalanx; the middle row the second; and the remaining row the third.

The bones of the first phalanx are the largest; they are convex posteriorly, and flattened anteriorly. A superficial cavity exists in the upper extremity of each for articulating with the metacarpal bones.

The bones of the second phalanx are smaller, and are also

convex behind, and flattened in front. The upper extremities of each has two superficial cavities for articulating with the bones of the first phalanx.

The bones of the third phalanx are the smallest, and differ materially from the others. They have but one articular extremity the upper, which has two superficial cavities for the corresponding faces of the second phalanx.

The lower extremity is rounded, flattened, thin, and rough.

The *sesamoid* bones are two in number; they are small and hemispherical, and are placed on the inside of the hand, at the lower extremity of the metacarpal bone of the thumb; they assist the action of the short flexor muscle. Sometimes they are also found at the metacarpal bones of the fingers of robust persons.

Remarks on the Upper Extremities.

The relative proportion of the upper extremities to the lower is much greater at birth than at any after period. This relative size gradually diminishes up to the age of puberty, by which time it has generally disappeared. It is probably owing to the lower extremities, receiving less blood in the fœtal state than the upper.

At birth, also, the extremities of the clavicles, humeri, bones of the fore-arm, carpus, and phalanges—all the long bones—are cartilaginous, and larger proportionably than in the adult. The proportion of animal matter is likewise greater, which renders them less liable to fracture. They may, however, be bent easily, and hence too much force should not be applied to them. Bow-legs are not unfrequently caused by permitting young infants to stand on their feet too long at a time. Distortion of the spine may also be induced by the same cause.

The *clavicle* is susceptible of motion in four directions—upwards, downwards, forwards, and backwards, and also of circumduction, which is a rapid succession of these motions; the articulation at the externum is the centre upon which these movements are performed. It also assists in supporting the shoulder,

and by keeping it from falling forwards greatly facilitates the motions of the joint. In females the clavicles are longer in proportion than in males, to accommodate the breasts, and in consequence of this increased length, some of the motions of the shoulder are performed with great awkwardness.

The *scapula*, besides, having all the motions ascribed to the clavicle, is capable of performing a partial rotation; it serves as a movable basis for all the motions of the arm.

The *humerus* is susceptible of motion, upwards, downwards, forwards, and backwards, and also of circumduction and rotation. The motion of circumduction is very extensive in the shoulder joint; it is a regular succession of all the other movements, except rotation, by which the arm describes a cone having for its apex the glenoid cavity.

Rotation is the turning of the bone upon itself; it is not extensive, rarely exceeding a half circle.

In the fore-arm there are two kinds of motion; in one kind the fore-arm is flexed or extended on the arm, and the ulna is the principal agent. In the other, the radius rotates upon the ulna, the latter being almost stationary. When the hand, following the forward rotation of the radius, has its palm directed downwards, it is said to be in a state of supination. This is the most common and easiest position of the fore-arm. In the backward rotation of the radius, in which the palm is upwards, the hand is in a state of supination; in this position the radius is parallel with the ulna; in pronation the middle part of the radius crosses that of the ulna.

The motions of the hand on the fore-arm are, flexion, extension, lateral inclination, or abduction, and adduction, and circumduction; those which take place between the first and second rows of the carpus are chiefly flexion and extension. The metacarpal bone of the thumb moves freely on the trapezium; its motions are, flexion, extension, abduction, adduction, and circumduction. The latter is the result of the others, and resembles that of the shoulder joint. The motions of the other metacarpal bones are much more limited, being confined mostly to a moderate degree

of flexion and extension. The first phalanges admit of flexion, extension, lateral motion, and circumduction; the second and third are restricted to the two first. It will thus be perceived from the nice mechanism of the upper extremities, and the number of pieces which enter into their structure, what a variety of movements they are capable of performing.

Lower Extremities.

The bones of the lower extremity are, the femur, os femoris, or thigh bone, the tibia, fibula, patella; and the tarsal, metatarsal, and phalangeal bones belonging to the foot—in all sixty-four.

Thigh Bone, or Femur.

The thigh contains but one bone, which is the longest in the body, reaching from the pelvis to the knee; it consists of a superior, and an inferior extremity, and a body.

Fig. 4.

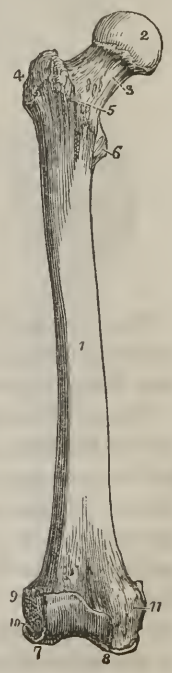


Fig. 4. Thigh bone, or Femur. 1 Body, or shaft; 2 head; 3 neck; 4 trochanter major; 6 trochanter minor; 7 internal condyle; 8 external condyle.

The superior extremity has a spherical head, with a depression upon it for the ligamentum teres. Between the head and body at an angle of about thirty degrees with the latter is the neck, which is about two inches in length. At the base of the neck on either side are two prominences, called the trochanters major and minor; the former, which is situated externally, is much the larger, and receives the insertion of several muscles coming from the pelvis; the latter is placed internally, and has the psoas magnus and iliacus internus muscles inserted into it. Between the two trochanters behind is a ridge, into which is inserted the quadratus femoris. A similar ridge in front marks the attachment of the capsular ligament.

The inferior extremity is much larger than the superior, and is divided by a fossa in front and a notch behind into two parts, called the

Fig. 5.

external and the internal condyle. Of these the internal from being placed the most obliquely, appears to be the larger. These condyles have articular faces for the tibia below, and the patella in front.

The body of the bone is nearly round, and is slightly curved anteriorly; its front surface is covered by the crurœus muscle.

Fig. 5. Posterior view of femur, showing the ridge, called the linea aspera, and the origin and insertion of the muscles along its two lips.

p insertion of the pectineus; a b insertion of the adductor brevis; g m insertion of the gluteus maximus; a m insertion of the adductor magnus; g m origin of the vastus externus; b origin of the short head of the biceps flexor cruris.

Posteriorly there is an elevated ridge, the linea aspera, which is considerably elevated, and serves for the origin and insertion of muscles. Near the middle of this ridge is a large foramen for the nutritious artery.

Bones of the Leg.

There are two bones to the leg, the tibia and the fibula, of which the former is placed internally, and the latter externally; they extend from the knee to the foot.

Tibia.—This bone is much longer and larger than the fibula; next to the femur it is the largest bone in the body; its lower half is commonly called the shin-bone. The upper extremity, or head, is large, and contains two superficial cavities, divided by a ridge, called the spinous process, for articulating with the condyles of the femur. At the base of the spinous process in front and behind the crucial ligaments are attached; at its summit is a depression for the attachment of the posterior extremity of the external semilunar cartilage. Upon each side of the

head is an enlargement, called the internal and external condyles, or tuberosities; on the back part of latter, looking downwards, is a small articular mark for the fibula. In front and just below the head is a tubercle for the attachment of the ligament of the patella.

The lower extremity of the tibia is much smaller than the upper, and somewhat quadrilateral; it articulates by a transverse cylindrical concavity with the astragalus; externally there is a triangular groove for articulating with the fibula; internally a large process, called the internal malleolus; posteriorly a slight groove for the tendon of the flexor longus pollicis muscle. The extensor tendons pass over the anterior surface.

The body is triangular, and consequently presents three edges and three surfaces. The anterior edge, called the spine, or crest, is sharp, superficial, and slightly curved; the external has attached to it one edge of the interosseous ligament; the internal edge is rounded, and in it are inserted several muscles. The internal surface is only covered by the skin; the external surface is covered by the muscles of the leg; the posterior surface gives origin to the tibialis anticus and flexor communis muscles.

Fig. 6.

Fig. 6. Anterior view of the tibia and fibula. 1 External face of the body of tibia; 2 internal condyle; 3 external condyle; 4 spinous process; 5 tubercle; 6 anterior edge, or spine; 7 lower extremity; 8 internal malleolus; 9 fibula; 10 upper extremity; 11 lower extremity, or external malleolus.

Fig. 7.

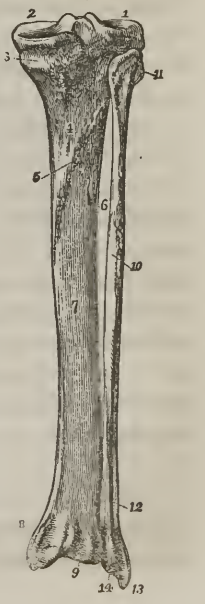


Fig. 7. Posterior view of the tibia and fibula 1 External condyle; 2 internal condyle; 3 fossa for the insertion of the semi-membranosus muscle; 4 fossa for the attachment of the posterior crucial ligament; 5 oblique ridge for the origin of the soleus muscle; 6 external edge; 7 posterior face of body; 8 internal malleolus; 9 groove for the tendon of the flexor longus pollicis; 10 fibula; 11 superior extremity; 13, 14 inferior extremity, or external malleolus.

Fibula.—The fibula is placed on the outside of the leg, with its upper part somewhat posteriorly. It is a long, thin bone, extending from the head of the tibia to the foot; it is rather shorter than the tibia. The upper extremity or head is enlarged, and has a concave surface on its upper part for articulating with the external condyle of the tibia; behind is a styloid process for the insertion of the head of the biceps. The lower extremity is also enlarged, and is called the external malleolus; its internal surface is smooth, triangular, and slightly convex for articulating with the astragalus; its external surface is also triangular and superficial. The pointed extremity of the external malleolus is sometimes called the coronoid process.

The body is triangular, presenting a twisted appearance, and has three faces; the external face gives origin to the peroneus longus and brevis muscles in its upper two-thirds; the internal face is towards the tibia, and is divided longitudinally by a ridge to which is attached the interosseous ligament; the spaces in front and behind this ridge give origin to muscles; the posterior face gives origin to the soleus and flexor longus pollicis muscles. The anterior angle is sharp and elevated in the middle. There is also a slight bend, towards the tibia, in this bone.

Patella.—This is a flat ovoid bone, situated at the fore part of the knee joint; it is commonly called the knee-pan. Its anterior face is convex and rough, and covered by the integuments; its posterior face is smooth, and unequally divided by a longitudinal ridge. The external part is the larger, and articulates with the trochlea in front of the external condyle of the femur; the internal part is the smaller, and articulates with the trochlea of the internal condyle. The superior margin is thick, and into it is inserted the tendon of the rectus femoris; the inferior margin is thinner and pointed, and has the tendon of the patella attached to it.

Bones of the Foot.

The foot consist of the tarsus, metatarsus, and phalanges. In the *tarsus*, which forms the posterior half of the foot, are seven

bones, the os calcis, astragalus, navicular, cuboides, and the external, middle, and internal cuneiform.

Os calcis.—This bone forms the heel, and is much the largest of the bones of the foot. In shape it is irregular; its longest diameter is lengthwise of the foot, and it is also thicker vertically than transversely. The superior surface has two articular faces at its front part for the astragalus. Between these cavities is a deep groove, the posterior part of which is occupied by the interosseous ligament. The internal surface is very concave, and is called the sinuosity; over it pass the tendons, vessels, and nerves for the sole of the foot; the external surface is nearly flat, and is marked by the passage of tendons of the peroneus longus and brevis; the under surface is slightly concave, and has two tuberosities behind, of which the internal is the larger; they give origin to the muscles of the foot. This surface has also a tuberosity in front.

The anterior extremity forms the greater apophysis, and articulates with the cuboides; the posterior extremity is convex, and rough to receive the insertion of the tendon Achillis.

Astragalus.—This is next in size to the latter, and is placed between it and the bones of the leg. It consists of a body and head. Above, the body articulates with the tibia, and on either side with the malleoli. The head is placed anteriorly and articulates with the scaphoides.

Scaphoid.—This is an oval bone situated at the inner side of the tarsus, between the astragalus and the cuneiform bones; behind is a deep concavity for the astragalus, and in front three triangular articular surfaces for the three cuneiform bones; at the inner side is a large tubcrosity for the insertion of the tendon of the tibialis posticus.

Cuboid.—Is on the outer side of the tarsus, between the os calcis and the metatarsal bones, and as its name indicates, is somewhat cuboidal in shape. The internal face is flat, and has an articular mark for the cuneiform internum; the posterior face is triangular, and articulates with the os calcis; the anterior face articulates with the last two metatarsal bones.

Internal cuneiform.—This is the largest of the three cuneiform bones, and is placed between the scaphoid and the first metatarsal bone. Anteriorly it joins the first metatarsal bone; posteriorly the scaphoid; internally it is marked by the tendon of the tibialis posticus; externally it joins the second metatarsal bone, and middle cuneiform. As may be infered from the name, in its general shape it resembles a wedge.

Middle cuneiform.—Is the smallest of the tarsal bones, and is also shaped like a wedge with the base above; it is placed upon the scaphoid, at the outside of the internal cuneiform. It articulates with these two bones and likewise with external cuneiform.

External cuneiform.—This is also wedge-shaped, and placed upon the scaphoid, between the second cuneiform and the cuboides. It articulates anteriorly with the third metatarsal bone; posteriorly with the scaphoid; internally with the second cuneiform, and the second metatarsal bone; externally with the cuboides.

Bones of the Metatarsus.

In the metatarsus are five parallel long bones; they extend from the tarsus behind to the toes in front, and are called numerically, beginning on the inner side of the foot.

The *first* is shorter and thicker than the others; its base articulates with the internal cuneiform, and its head, which is spherical, with the first phalanx of the great toe. Below its head are the sesamoid bones.

The *second* is the longest; its base articulates at the extremity with the middle cuneiform, on the inside with the internal cuneiform, and on the outside with the external cuneiform and second metatarsal.

The *third* has a triangular base which articulates with the third cuneiform, and also laterally with the second and fourth metatarsal bones.

The *fourth* articulates at its base with the cuboid, and on either side with the third and fifth metatarsal bones.

The *fifth* is the shortest, and is readily distinguished by a large tubercle, which projects outward from its base beyond the external margin of the cuboides, into which the tendons of the peroneus tertius and brevis are inserted. Its base articulates with the cuboid and fourth metatarsal bones; its anterior extremity is more rounded than that of the others.

Bones of the Toes.

There are five toes on each foot, which are named numerically, beginning at the great toe. Each toe is formed of three bones, called phalanges, except the great toe, which like the thumb, has but two.

The first row or phalanx bear a general resemblance to the first row of the fingers, but are smaller; the bases articulate by a deep cavity with the metatarsal bones; the anterior extremities have two small condyles for the second row.

The second row or phalanx, also resemble, the second row of the fingers, though they are much shorter, scarcely having any bodies; the bases have two cavities for articulating with the first phalanx, and the anterior extremities two convexities for the third phalanx.

The third row articulates with the second, and are very small; the fourth and fifth are generally but imperfectly developed.

The phalanges of the great toe are much larger than the others. Two sesamoid bones are connected with the tendon of the flexor brevis pollicis of each foot; they have articular faces which join the head of the metatarsal bone of the great toe.

Remarks on the Lower Extremities.

As before remarked the lower extremities are proportionably smaller than the upper at birth, owing to their receiving up to that time a smaller quantity of blood.

Like those of the upper extremities, the bones of the lower are but partly ossified at birth; the ends of all the long bones are cartilaginous, as are also the patella and tarsal bones with the exception of parts of the os calcis and astragalus. The meta-

tarsal and phalangeal bones are not so much developed as the corresponding bones of the hand.

At birth also the upper end of the femur is more at a right angle to the body than it is in the adult; the body of the bone is but slightly curved, and the neck short; all of which tend to make standing and walking difficult in young children.

The bones of the lower extremities all become ossified about the fifteenth year, and they have then nearly the same form as in the adult. The epiphyses are the only exceptions to this, which where they join the body of the bone are often cartilaginous, and until the twentieth or twenty-fifth year may be separated by boiling.

The motions of the thigh are the same as those of the arm, viz. flexion, extension, abduction, adduction, circumduction, and rotation, though they are much less extensive in consequence of the acetabulum, the basis on which they are performed, being fixed.

Flexion, by which the thigh is carried forward, is performed with great facility and ease; extension, the reverse of this, is also performed with much freedom, though it is less extensive than the former; abduction is that motion by which the thighs are separated, and adduction the act of bringing them together again or crossing them; the muscles concerned in the latter are called adductors. Both of these motions are performed to a considerable extent. Circumduction—the regular succession in a circle of the other motions mentioned—is less extensive than in the arm. Rotation or the turning of the femur upon itself, is effected with much facility, especially rotation outwards, or backwards.

The chief motions of the leg on the thigh are flexion and extension; rotation is also performed in a slight degree. Those of the foot upon the leg are flexion, extension, and some lateral motion.

Of the Articulations.

The connection of one bone with another is called an articulation, or joint. Some articulations are movable, and others im-

movable; in the structure of the former cartilage, ligaments, and synovial membranes are necessary.

Cartilage is a smooth, white, flexible, and elastic substance, and ranks next to bone in hardness. Chemically, it is composed of gelatine and water with a small portion of phosphate of lime. It resists the attacks of disease almost as firmly as bone; it is not highly organized, being without red blood-vessels, nerves, and lymphatics, and unless diseased has no sensibility. In old age it is disposed to ossify. It is invested by a fibrous membrane, called *perichondrium*, which corresponds with the periosteum.

That portion of cartilage, called *articular*, which covers the extremities of bone, is thicker in the middle when it covers convex surfaces, and thicker on the edges when it lines cavities.

Cartilages, which are movable in a joint, are called *interarticular*.

Fibro-cartilage, which consists partly of cartilage, and partly of ligament, and is much stronger than the former, is found in the external ear, between the vertebra, in the knee-joint, &c.

Ligaments are composed of fibrous tissue, and are inelastic. Those connecting the joints pass from one extremity of the bone to the other, mostly exterior to the synovial membrane. They are of two kinds, white and yellow; the tendons and most of the ligaments are examples of the former, and the ligamentum nuchæ of the latter. When ligaments are cord-like, they are called funicular, and when open at the ends like a bag, capsular.

Synovial membranes are thin, closed serous sacks, which line the movable joints. They secrete a viscous fluid, resembling the white of an egg, called *synovia*, which lubricates the joints and prevents friction.

The different kind of articulations have been divided into Synarthrosis, Amphiarthrosis, and Diarthrosis.

Of the first, which implies immobility, there are several species—that which unites the bones of the skull is termed *Sutura;* that which unites the bones of the upper jaw *Harmonia;* that

by which the vomer joins the azygos, *Schindylesis;* and that joining the teeth with the alveoli, *Gomphosis.*

In the second, which implies partial motion, the bodies of the vertebræ and symphyses are included.

In the third, diarthrosis, three species are included; *Arthrodia,* that uniting the tarsal and carpal bones; *Ginglymus,* or hinge-like, as the elbow and wrist; and *Enarthrodia,* or ball and socket joint, as the hip and shoulder.

In the *articulation* of the *lower jaw* there are: a capsular ligament, an internal and an external lateral ligament, a stylo-maxillary ligament extending from the styloid process of the temporal bone to the angle of the jaw; an inter-articular cartilage—a thin oval plate dividing the joint into two cavities—with two synovial membranes, one on either side of the inter-articular cartilage; or when the cartilage is imperfect but one synovial membrane.

In the *articulation* of the *vertebræ* there are: an anterior vertebral ligament, which is placed in front of the bodies of the vertebræ, and extends from the second cervical to the first sacral vertebra, gradually increasing in breadth as it descends; a posterior vertebral ligament, which is placed at the posterior part of the bodies of the vertebra within the spinal canal, and extends from the occiput to the coccyx; it is narrow and thick in the thorax, wider below, and adheres more closely to the inter-vertebral substance than to the bodies of the vertebræ, which gives it a serrated appearance. Between the bodies of the vertebræ, and adhering closely to their substances, are twenty-three fibro-cartilaginous disks; these are arranged in concentric lamina, compressible, and gradually increase in thickness from above downwards. Owing to this compressibility, the trunk becomes shortened after the erect position has been maintained for several hours, but is restored to its original length again by an interval of rest in the horizontal posture.

The *oblique processes* are united by a capsular ligament.

The *spinous processes* are joined together by the inter-spinal ligaments, which fill up the spaces between them. They are,

however, wanting in the neck, and their place is supplied by the ligamentum nuchæ, which extends from the seventh cervical vertebræ to the posterior occipital protuberance, dividing the muscles of the neck.

The *yellow ligaments*, which are elastic, are placed between the bony bridges of the vertebræ; there are twenty-three pairs of them.

Between the occiput and atlas are: an anterior ligament, which extends from the back parts of the occipital foramen to the front of the atlas; a posterior ligament, which extends from the back part of the occipital foramen to the corresponding edge of the atlas; and a capsular ligament, surrounding the superior oblique process of the atlas, and the condoloid process of the occiput.

Between the atlas and dentata are: a transverse ligament, which passes across the atlas transversely from one tubercle to the other; two moderator ligaments, extending from the sides of the processus dentatus to the inner side of each occipital condyle; a middle or straight ligament, passing from the processus dentatus to the anterior edge of the occipital foramen; a loose capsular ligament surrounding the oblique processes; and some ligamentous bands, called Lacerti ligamentosi, reaching from the back part of the body of the dentata to the occiput.

In the *articulation* of the bones of the *pelvis*, there are, uniting the sacrum and ilium, an anterior sacro-iliac ligament, which consists of short fibres passing from one bone to the other; a posterior sacro-spinous ligament extending from the spinous processes of the ilium to the third and fourth transverse processes of the sacrum; and an anterior and posterior sacro-sciatic ligament; the posterior, which is much the larger, arises from the posterior inferior spinous process of the ilium, the margin of the sacrum, and the first bone of the coccyx, and is inserted into the inner margin of the tuberosity of the ischium; the anterior, which is in front of the posterior, extends from the side of the sacrum to the spine of the ischium. The articulating surfaces of both the sacrum and ilium are covered with cartilage.

The obturator ligament passes over the thyroid foramen

closing it up, with the exception of a small opening at its upper part for the passage of the obturator vessels and nerves.

In addition to the foregoing there is an ilio-lumbar ligament, a lumbo-sacral ligament, an anterior and posterior coccygeal ligament, and a sub-pubic ligament, the names of which sufficiently indicate their attachments.

The articulation of the pubes—symphysis pubis—consists chiefly of a fibro-cartilaginous substance, like that of the vertebræ.

The *Ribs* in their articulation posteriorly with the vertebræ have an anterior or radiated ligament, extending from the head of the rib to the two contiguous vertebræ and the intervening cartilage; a capsular ligament enclosing the head of the rib; an inter-articular ligament, extending from the ridge on the head of the rib to the inter-vertebral substance; a capsular ligament connecting the transverse processes to the tubercle of the rib; an internal, middle, and external costo-transverse ligament, extending from the transverse process to the adjacent rib.

In the articulation of the ribs anteriorly with the sternum there is: an anterior radiated ligament, which passes from the cartilages of the true ribs to the sternum; a posterior radiated ligament, having the same connections; and a costo-zyphoid ligament, which extends from the cartilages of the sixth and seventh ribs to the zyphoid or ensiform cartilage.

In the articulation of the *shoulder* there are: uniting the clavicle and sternum, a capsular ligament, within which, and dividing the joint into two cavities, is a wedge-shaped inter-articular cartilage; an inter-clavicular ligament, connecting the two clavicles; and a rhomboid ligament, extending from inferior edge of the clavicle to the cartilage of the first rib.

Uniting the scapula and clavicle are: a capsular ligament, connecting the acromion process of the scapula, and the outer end of the clavicle; a coraco-clavicular ligament, consisting of two parts, one called conoid, the other trapezoid, which extends from the coracoid process to the external extremity of the clavicle; a bifid ligament, which goes from the coracoid process to

the clavicle and the cartilage of the first rib; a coraco-acromial ligament connecting the coracoid and acromion processes; and a coracoid ligament which passes across the coracoid notch.

Uniting the scapula and humerus, are, a loose capsular ligament which invests the glenoid cavity and the neck of the humerus; a coraco-humeral ligament, a part of the capsular, which extends to the coracoid process; and a glenoid ligament which consists of a ring of fibro-cartilage attached to the edge of the glenoid cavity, to increase its depth.

In the articulation of the *elbow joint* there are, a capsular ligament, which surrounds the head of the humerus, radius and ulna; an internal lateral ligament, passing from the internal condyle to the coronoid and olecranon processes of the ulna; an external lateral ligament, extending from the external condyle to the lateral ligament; an angular or coronary ligament, which surrounds three-fourths of the head of the radius, and extends to either side of the lesser sigmoid cavity; and an interosseous ligament, which fills up the space between the radius and ulna throughout nearly their whole length.

The articulation of the *wrist*, which is formed by the greater sigmoid cavity of the radius, and the scaphoid, semilunar and cuneiform bones, has a capsular ligament, an anterior and a posterior ligament, and an internal and external lateral ligament. The individual bones of the carpus are connected by palmar and dorsal ligaments.

The *bases* of the metacarpal bones are also attached to the second row by palmar and dorsal ligaments. The pisiform bone and the thumb have distinct capsular ligaments.

The fingers are attached to the metacarpal bones by an internal and external lateral ligament; an anterior or palmar ligament, and a posterior ligament furnished by the extensor tendon.

The phalangeal bones are joined together by a similar arrangement of ligaments.

In the articulation of the *hip joint*, formed by the head of the thigh bone and the acetabulum, the following ligaments enter. The cotyloid ligament, which is a thick prismatic ring

surrounding the margin of the acetabulum and increasing its depth. The ligamentum teres—round ligament—which is attached to a pit on the head of the femur, whence it passes in two fasciculi to be inserted into the notch of the acetabulum; the cotyloid ligament and the capsular ligament, which encircles the acetabulum and the neck of the femur, and is the strongest ligament in the body.

In the articulation of the *knee joint* there are, an anterior ligament, called also the ligament of the patella, which is a continuation of the quadriceps muscle, is firmly attached to the patella, and inserted into the tubercle of the tibia; a posterior ligament, also called ligament of Winslow, which extends obliquely from the external condyle to the back part of the internal tuberosity of the tibia; two semilunar cartilages, which are prismatic rings attached to the margins of the tibia, to deepen its articular surface; two crucial ligaments, which cross each other, the one extending from the front of the spine of the tibia to the posterior part of the inner face of the external condyle, the other passing from behind the spine of the tibia to the anterior part of the external face of the internal condyle of the femur; and an internal and external lateral ligament on either side of the joint.

The *tibia* and *fibula* are united; at the superior extremity, by an anterior and posterior ligament, which pass obliquely between the heads of the two bones before and behind; along their length by an interosseous ligament, which fills up the space between the bones, except a small opening at the upper extremity to transmit the anterior tibial artery; and at the lower extremity, by an anterior and posterior ligament similar in arrangement to those connecting the heads of the bones.

The *ankle joint* is united by an internal and an external lateral ligament; the internal, also called deltoid is triangular in shape, and has its apex attached to the internal malleolus, and its base to the os calcis, astragalus, and calcaneo-scaphoid ligament; the external consists of three fasciculi which arise from

the external malleolus, and are inserted into the astragalus and os calcis.

Articulation of the tarsus.—The astragalus is united to the os calcis by a thick, strong, interosseous ligament, and by a posterior ligament; the os calcis to the scaphoid by a superior and an inferior calcaneo-scaphoid ligament; the os calcis and cuboid by a superior and inferior calcaneo-cuboid ligament; and the astragalus and scaphoid by a semicircular ligament which passes from the neck of the astragalus to the edge of the concavity of the scaphoid. The three cuneiform bones are joined to the scaphoid, and to each other by dorsal, plantar and interosseous ligaments.

Articulation of the metatarsus.—The first of these bones has a strong capsular ligament, attaching its base to the internal cuneiform; the second and third have the base attached to the middle and external cuneiform by dorsal and plantar ligaments; and the bases of the fourth and fifth are joined to the cuboid by dorsal and plantar ligaments. The heads of the metatarsal bones are united to the phalanges by two lateral and a plantar ligament, and superiorly by an expansion of the extensor tendon; and to each other by a strong transverse ligament.

In the articulation of the phalanges there is an arrangement of ligaments corresponding to that of the hand.

Of the Skin.

The skin covers the entire body, and besides affording protection to the various parts, serves also as an organ of touch and secretion.

It is continuous with the mucous membrane, and at the orifices of the canals leading into the body, as the mouth, nose, &c., is readily converted into it. Its color and thickness vary in different races and individuals, and in different parts of the same individual. Climate has a great influence over it, the tendency of parts exposed to tropical heat and light being to turn dark.

The skin is covered by a great number of wrinkles; the largest, those which appear on the forehead, face, &c., are caused by the contractions of muscles, and the flexion of the joints; others of a finer description are produced by the contractile nature of the skin.

Numerous hairs, perspiratory ducts, and pits showing the orifices of sebaceous glands, and follicles, are contained in the skin; the perspiratory ducts or pores are not visible to the naked eye. The facility with which the skin slides backwards and forwards on most parts of the body is owing to the looseness of the cellular tissue beneath it.

The skin consists of two layers, the cutis vera or true skin, also called chorion, and the epidermis or cuticle. Formerly a third layer, the rete mucosum, was admitted; but more recent observations have demonstrated this to be merely a layer of the cuticle.

Of the two layers the *true skin* is the thicker and deeper; it is closely adherent to the cellular tissue, and perfectly white and semi-transparent in all persons. The external surface is covered with fine conical projections, called villi or *papillæ tactus;* the papillæ are most numerous and distinct in those parts where there is much motion. On the hands and feet they are arranged in double rows, which occasion the semi-circular and spiral wrinkles of the cuticle on these parts. Each papillæ consists of an artery, vein, and nerve, and the sensibility of a part is in proportion to their number.

The texture of the true skin is fibrous; the irregular interlacing of fibres producing a mass of net-work or areolæ, through the meshes of which the hairs, nerves, blood-vessels, &c., are transmitted. Its composition is of condensed cellular tissue, the yellow fibrous element predominating where great elasticity is required, as in the arm pit; and the white element where resistance is wanted, as in the sole of the foot. It unites readily with tannin, and forms leather. Boiling converts it into gelatine.

Fig. 8. Magnified representation of the skin. a, Cuticle or epidermis; b, papillæ tactis or villi; c, cutis vera or true skin.

Fig. 8.

The *cuticle* or *epidermis* varies in thickness according to the amount of pressure to which it is subject; in the palms of the hand, and the soles of the feet in individuals, who perform manual labor, it becomes very thick. It is not organized, neither vessels nor nerves being traceable into it, but is composed of particles arranged in laminæ, or layers; the deepest being granular, the next somewhat flattened, and those upon the surface mere horny scales which are constantly being shed, and replaced again by others. The coloring matter is contained in the lowermost layer, and is very abundant in negroes, moles, freckles, &c. The facility with which the cuticle may be divided into different layers, owing to its laminated arrangement, formerly caused the innermost layer to be considered distinct, and to receive a separate name, that of rete mucosum.

Of the Sebaceous Glands.

These consist of a blind, pouch-like duct, which is lined by an epithelium containing granules of sebaceous matter in its particles, and has an orifice opening into hair follicles, or upon the general surface. They are most abundant on the scalp and face, particularly about the nose. There are none on the palms of the hands and the soles of the feet.

The secretion is of an oily nature, and serves to lubricate the hair and skin; it is this which gives to linen that has been worn a long time a greasy appearance, causes water when applied to the surface of the body to collect in drops, and gives rise to the

strong disagreeable smell in negroes, and persons who do not pay proper attention to cleanliness. Parasitic animalculæ are frequently found in the ducts of these glands.

Of the Nails.

The nails take the place of the cuticle on the ends of the fingers and toes, and like the latter are readily separable from the true skin by maceration. They correspond with the hoofs and talons of the lower orders of animals.

They consist of a root, body, and free extremity. The root is that part which is concealed; it has a thin irregular edge, is white, thin, soft, and about one-fifth of the whole length of the nail. The body is that portion between the root and free extremity; its under surface adheres closely to the skin, which produces it, and is hence called the matrix; it is also soft and marked by longitudinal grooves.

The white part of the nail near the root is called the crescent or lunula, and is caused by the absence of vascularity. At its root the nail is received into a groove formed by the cutis vera.

Of the Hairs.

Hairs are found on almost every part of the skin except the palms of the hands and soles of the feet. They vary in size and color in different races, sexes, and individuals, and in different parts of the body. Those on the head attain the greatest length, and grow more closely together than any others—in females they grow longer, and are more abundant than in males. Those of the face (the beard), when allowed to grow, are next in length, and are thicker than the others, and more disposed to curl. Generally the eyes and hair correspond in color, and the darker the hair the coarser. It has been computed that a fouth of an inch square has upon it 147 black hairs, or 162 hazel, or 152 white. In some individuals the hairs are so much developed as almost to conceal the skin.

Each hair consists of a bulb and a shaft or stalk; the bulb is the extremity contained within a follicle of the skin, and the

shaft is the part that projects beyond the surface. The *human* hair is solid and not globular as is generally supposed. It is continuous with the cuticle lining the follicle, and is arranged in lamina or scales, which overlap each other like the shingles of a house; the middle portion has a looser and more porous structure than the external, and has received the name of medulla, while the external is termed the cortex. The hair is nourished from the bottom of the follicle, as the nail is from the matrix, or the cuticle from the true skin.

The hairs, when large, are used as organs of touch, and in some animals, the whiskers of the cat, for instance, possess some degree of sensibility, which is owing to the projection of a conoidal papilla of the follicle furnished with nerves, into the bottom of the bulb. As a general rule, however, they are void of sensibility. The hairs receive no blood-vessels; their moisture is chiefly owing to the secretion of the sebaceous follicles passing through them by capillary attraction. In those instances in which the hair has suddenly become white from mental emotion, it has been by some, supposed to be owing to the secretion of a fluid acid, which penetrates the tissue of the hair in this way, and destroys its color.

The erection of the hair in some animals is caused by the contraction of the subcutaneous muscle; and a similar effect in man, produced by great fright, is owing to the contraction of the occipito frontalis muscle. Moisture lengthens the hairs and dryness shortens them.

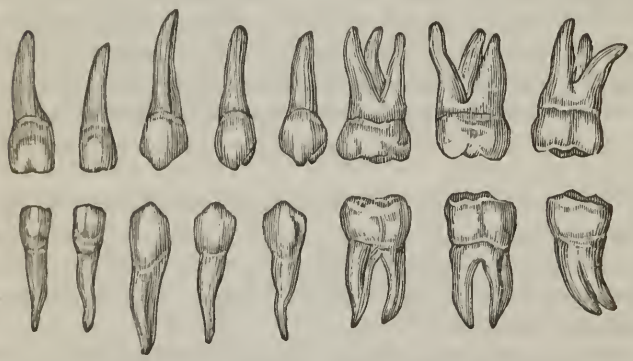
When the hair falls off, it is occasioned by the drying up of the fluids of the follicle or its death; in the baldness of old persons, the latter generally takes place, and consequently all efforts to restore it will be fruitless. But when the hairs fall off from sickness, the follicles remain, and a new crop is soon produced. When the hair becomes white from age, the change of color begins at the free extremity; but if the color is restored again, the change begins at the root. In the disease known as Plica Polonica, which consists in a matting together of the hair by a glutinous substance from the cutaneous glands, if the hairs are

cut close to the skin they bleed; this is owing to the elongation of the vascular papilla at their roots by disease.

Of the Teeth.

The permanent teeth are thirty-two in number, sixteen being placed in the alveolar processes of each jaw. They are the hardest part of the human body. The part of a tooth above the gum is called its crown; the narrow portion surrounded by the gum its neck; and the portion within the alveolus its fang, or root. There are four classes of teeth, as follows: two *incisors*, or cutting teeth, on each side of each jaw next the middle line; one *cuspid*, or pointed place next to these outwardly; two *bi-cuspid*, or double pointed; and three *molars*, or grinding teeth.

Fig. 9. Permanent teeth.



The *incisors* have a bevelled edge which in early life is serrated; their roots are single and conoidal; those of the upper jaw are the largest.

The *cuspid* (pointed), or canine, which are placed between the incisors and bi-cuspides, have a conoidal body and longer roots than any of the others. Those of the upper jaw are commonly known as eye-teeth, and those of the lower as stomach-teeth.

The *bi-cuspides* are next in size to the molars; their bodies have two conical tubercles, or grinding points, the external of

which is the larger. The root is flat and deeply grooved on either side. The two posterior superior have each two roots; the others generally but one.

The *molars*, of which there are six in each jaw, have large quadrilateral bodies, surmounted by four or five grinding points; their roots are shorter than those of the bi-cuspides, and are divided into two, three, four, or even five branches. The third, called the wisdom-tooth, is generally smaller than the other two.

In the centre of each tooth is a cavity, which is filled by a *pulp*, chiefly composed of an artery, vein, and nerve, which enter through the small orifice at the extremity of the root. This pulp is soft, of a gray color, and extremly sensitive.

Three textures enter into the *structure* of each tooth—the ivory, or bony portion, the enamel, and the cementum. The first, which forms the principal part of the tooth, is arranged in radiating fibres; it contains neither blood-vessels, nor nerves, nor are its particles absorbed as those of bone. Chemically, it consists of phosphate of lime, gelatine, and water. The *enamel* is the hardest portion, it covers the body of the tooth, is white, brittle, and semi-transparent, thicker on the grinding surface, and terminates by a thin edge at the neck. It is also arranged in radiating fibres, and has neither blood-vessels, nor nerves. The *cementum* is a thin coating extended over the root of the tooth, which in structure resembles bone.

The periods at which the permanent teeth make their appearance are as follows: the four first molars, and the two inferior incisors from the 6th to the 8th year; the two superior central incisors from the 7th to the 9th year; the four lateral incisors from the 8th to the 10th year; the four first bi-cuspides from the 9th to the 11th year; the four cuspidati from the 12th to the 13th year; the four second bi-cuspides from the 11th to the 13th year; the four second molars from the 12th to the 14th year; and finally the four last molars from the 18th to the 30th year, or even later in some instances.

Fig. 10.

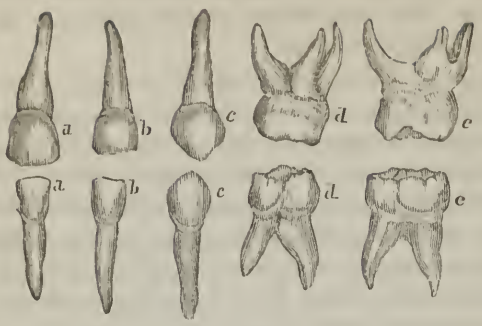


Fig. 10. The deciduous, or milk-teeth. a a central incisors; b b lateral incisors; c c cuspidati, or eye- and stomach-teeth; d d first molars; e e second molars.

The rudiments of all the teeth, both of the first and second set, fifty-two in number, are contained in the gum of the infant. The first set, called the *deciduous*, or milk-teeth, are twenty in number, viz. four incisors, two cuspidati, and four molars in each jaw. As with the temporary teeth there is a good deal of irregularity in the time of their appearance; usually the four central incisors appear from the 5th to the 10th month; the four lateral incisors from the 8th to the 13th month; the four first molars from the 10th to the 14th month; the four cuspidati from the 12th to the 18th month; and the four second molars from the 24th to the 30th month. The teeth of the lower jaw generally make their appearance a short time before those of the upper. About the seventh year, the time at which the first of the permanent teeth make their appearance, the first set begin to loosen and fall out, generally, in the order in which they came.

Of the Muscles.

The muscles are the organs by which the various motions of the body are performed; they are constituted of the substance commonly called flesh, and possess the power of shortening themselves, called *contractility*, and which produces motion.

Each muscle is composed of a number of *fasciculi* (bundles of fibres) of various size; these again are made up of filaments. Every muscle and fasciculus is enveloped, and held together by a portion of cellular membrane, called its sheath, which is tough and elastic, and becomes more delicate the smaller the fasciculus or filament it surrounds.

The uses of the sheaths are to facilitate the sliding of the muscles upon each other, and by their pressure to add to their strength and tenacity. Towards their extremities the muscles are attached to a white, shining, fibrous structure termed tendons, which serve to fasten them securely to the surfaces of bones; the extremity, which is the more fixed, is termed the head, or *origin*, and that which is the more movable, the tail, or *insertion;* and the middle is the *belly*, or swell. The fibres of the most simple muscles are longitudinal. In others the fibres are disposed in rays which converge to a tendinous point, hence called *radiate* muscles; others again have their fibres converging to one or both sides of a tendon like the plumes of a pen; these are called the *penniform*, and the *bi-penniform.*

There are two classes of muscles, the voluntary, or those which are influenced by the will, and the involuntary, or those not governed by the will. The first class, which is much the most numerous, are placed between the skeleton and the skin, and constitute the chief bulk of the body; the second class are contained within the great cavities of the skeleton, and enter into the formation of the digestive, circulatory, and urinary organs, performing most of the internal movements of the animal economy. The color of the muscles of voluntary motion is of a decided red, that of the involuntary muscles is lighter; the fibres of the latter, also, cross each other and interlace.

The muscles are divided into four parts, viz. those of the head and neck; those of the trunk; those of the upper extremities; and those of the lower extremities.

Muscles of the Head and Neck.

First, of the Face.

The *occipito frontalis* is a thin muscle passing from the back to the front of the head immediately beneath the scalp; it has four bellies, and arises from the superior semi-circular ridge of the occiput, and is inserted into the superior margin of the orbicularis oris, and corrugator supercilia, and into the internal angular process of the os frontis and nasi. It pulls the skin of head backwards and forwards, and elevates the eye-brows, making transverse wrinkles.

Fig. 11.

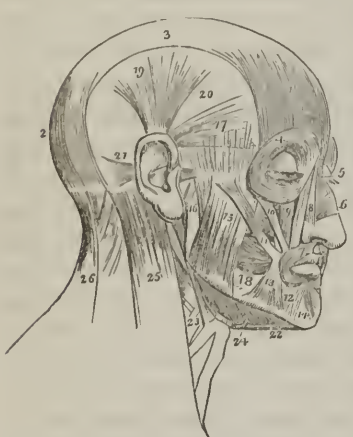


Fig. 11. View of the muscles of the head and neck. 1, 2, 3 Occipito frontalis; 4 orbicularis palpebrarum; 5 corrugator supercilii; 6 compressor naris; 7 orbicularis oris; 8 levator labii superioris alæque nasi; 9 levator anguli oris; 10 zygomaticus minor; 11 zygomaticus major; 12 depressor labii inferioris; 13 depressor anguli oris; 14 levator mentii; 15 masseter; 16 temporalis; 18 buccinator; 24 mylo-hyoideus; 25 sterno-cleideo-mastoideus.

The *compressor naris* arises from the root of the ala nasi, and is inserted into its fellow on the dorsum of the nose, and into the lower part of the os nasi. It serve both to compress and dilate the nostril.

The *orbicularis palpebrarum* is a sphincter surrounding the orbits of the eyes; it arises from the nasal process of the superior maxillary bone, the os unguis, the internal angular process of the os frontis, and the superior margin of the internal palpebral ligament; and is inserted into the orbital and nasal processes of the superior maxillary, and into the inferior margin of the palpebral ligament. It closes the eyes.

The *corrugator supercilii* arises from the internal angular

process of the os frontis, and is inserted into the occipito frontalis and orbicularis. It is small and pointed, and makes the vertical wrinkles of the forehead.

The *levator labii superioris alæque nasi* is placed at the side of the nose; it arises from the nasal and orbitar processes of the superior maxillary bone, and is inserted into the upper lip and the wing of the nose. It draws the upper lip and wing of the nose upwards.

The *levator anguli oris* is small and concealed by the last; it arises from the superior maxillary bone below the infra-orbital foramen, and is inserted into the angle of the mouth. Its use is to elevate the angle of the mouth.

The *zygomaticus minor* arises from the fore part of the malar bone, and is inserted into the upper lip. It draws the corner of the mouth obliquely upwards and outwards.

The *zygomaticus major* arises from the malar bone outside of the last, and is inserted into the corner of the mouth. Its use same as the last.

The *depressor labii superioris alæque nasi* arises from the alveolar processes of the incisor and canine teeth, and is inserted into the wing of the nose and upper lip. It depresses the upper lip and the wing of the nose.

The *depressor anguli oris* arises from the base of the lower jaw at the side of the chin, and is inserted into the corner of the mouth. It draws the corner of the mouth downwards.

The *depressor labii inferioris* arises from the base of the lower jaw, beneath the last, and is inserted into the whole side of the lower lip. It draws the lip downwards.

The *levator menti*, or *labii inferioris* arises from the alveolar processes of the lateral incisor and canine teeth, and is inserted into the lower lip. It elevates the lip.

The *buccinator* arises from the coronoid process of the lower jaw, the tuber of the upper jaw, and the alveolar processes of both jaws, and is inserted into the corner of the mouth and lips. It draws the corner of the mouth backwards.

The *orbicularis oris* is a circular muscle, which surrounds the mouth, constituting the principal part of the lips; it has no long origin but is attached to the surrounding muscles, and acts as the antagonist to most of them.

The *masseter* arises from the upper maxillary, malar, and the zygomatic process of the temporal bones, and is inserted into the angle and outer surface of the lower jaw. It closes the jaws, and also draws the lower jaw backwards and forwards.

The *temporalis* arises from the temporal fascia, and from the sides of the temporal, frontal, and parietal bones, and is inserted into the coronoid process of the lower jaw. It pulls the lower jaw upwards.

The *pterygoideus externus* arises from the pterygoid, spinous, and temporal processes of the sphenoid bone, and from the tuber of the upper maxillary, and is inserted into the neck of the lower jaw. It draws the lower jaw upwards.

The *pterygoideus internus* arises from the pterygoid fossa, Eustachian tube, and internal pterygoid process, and is inserted into the inner surface of the neck of the lower jaw. It draws the jaw upwards.

Second, of the Neck.

There are two layers of cellular tissue in the neck, called the superficial, and the deep seated *fascia*; the first is immediately beneath the skin, and a continuation of the fascia covering the whole body; the second is more condensed, and extends from the ligament nuchæ to the sternum, investing the several muscles and blood-vessels.

The *platisma myoides* is a broad thin muscle, placed between two laminæ of the superficial fascia, and is attached to the cellular tissue below the clavicle, and to the muscles at the side of the face and lower jaw. It elevates the skin of the neck.

The *sterno-cleido-mastoideus* arises from the upper part of the sternum, and the sternal end of the clavicle, and passing obliquely across the neck is inserted into the mastoid process, and the adjoining ridge of the occipital bone. It forms a pro-

minent ridge on the outside of the neck. Its use is to draw the chin to the sternum.

The *sterno-hyoideus* arises from the sternum, clavicle, and cartilage of the first rib, and is inserted into the lower edge of the hyoid bone. It draws the hyoid bone towards the sternum.

The *sterno-thyoideus* arises from the sternum and cartilage of the first rib, and is inserted into the side of the thyroid cartilage. It draws this cartilage downwards.

The *thyro-hyoideus* arises from the side of the thyroid cartilage, and is inserted into the base and cornu of the os hyoideus. It draws the os hyoideus and thyroid cartilage together.

The *omo-hyoideus* arises from the upper edge of the scapula, and is inserted into the base of the os hyoideus. It draws the os hyoideus downwards.

The *digastricus* arises from the fossa at the base of the mastoid process of the temporal bone, and is inserted into the base of the lower jaw at the side of its symphysis; its middle is tendinous, and passes through the stylo-hyoid muscle. Its use is to raise the hyoid bone, and open the mouth, even when the lower jaw is fixed.

The *stylo-hyoideus* arises from the middle and lower part of the styloid process of the temporal bone, and is inserted into the base and cornu of the os hyoides. It draws the os hyoides upwards and backwards.

The *stylo-glossus* arises from the upper and internal part of the styloid process, and is inserted into the side of the root of the tongue. It draws the tongue backwards.

The *stylo-pharyngeus* arises from the inner side of the root of the styloid process, and is inserted into the side of the pharynx between the superior and middle constrictors, and is inserted into the posterior margin of the thyroid cartilage. It draws the larynx and pharynx upwards.

The *mylo-hyoideus* arises from the root of the alveolar process of the lower jaw, and is inserted into a white tendinous line, placed between it and its fellow. It forms the floor of the

mouth. Its use is to draw the os hyoides upwards and project the tongue.

The *genio-hyoideus* is placed beneath the last, and arising from the tubercle on the posterior side of the chin, is inserted into the body of the hyoid bone.

The following seven pairs of muscles are placed at the front and sides of the cervical vertebræ.

The *longus colli* arises from the three upper dorsal vertebræ, and the transverse processes of the five lower cervical vertebræ; and is inserted into the bodies of all the cervical vertebræ. It bends the neck forwards and to one side.

The *rectus capitis anticus major* arises from the transverse processes of the third, fourth, and fifth cervical vertebræ, and is inserted into the cuneiform process of the os occipitus. It bends the head forwards.

The *rectus capitis anticus minor* arises from the front of the first cervical vertebræ, and is inserted into the basilar process of the occiput. It bends the head forwards.

The *rectus capitis lateralis* arises from the front of the transverse process of the atlas, and is inserted into the ridge leading from the condyle to the mastoid process of the occiput. It draws the head slightly to one side.

The *scalenus anticus* arises from the transverse processes of the fourth, fifth, and sixth cervical vertebræ, and is inserted into the upper surface of the first rib near its middle. It bends the neck forwards, or elevates the first rib.

The *scalenus medius* arises from the transverse processes of all the cervical vertebræ, and is inserted into the upper surface of the first rib from the middle to the tubercle. Its use same as the last.

The *scalenus posticus* arises from the transverse processes of the fifth and sixth cervical vertebræ, and is inserted into the upper face of the second rib, beyond its tubercle. It bends the neck, and raises the second rib. The use of the three scalenii muscles, acting together, is to elevate the ribs, and bend the neck to one side.

Muscles of the Trunk.

First, those of the front of the Thorax.

The *pectoralis major* forms the large fleshy cushion of the chest. It arises from the first two bones of the sternum, the cartilages of the fifth and sixth ribs, the anterior two-thirds of the clavicle, and the tendon of the external oblique muscle, and is inserted by a broad thin tendon into the outer edge of the bicipital groove of the humerus. It draws the arm inwards and forwards, and depresses it when raised.

The *pectoralis minor* is beneath the last; it arises from the upper edges of the third, fourth, and fifth ribs, and is inserted into the inner faces of the coracoid process of the scapula. It draws the scapula inwards and downwards.

The *subclavius* arises from the cartilage of the first rib, and is inserted into the lower face of the clavicle. It is placed immediately beneath the clavicle, and draws it downwards.

The *serratus magnus*, or *serratus major anticus* is a broad muscle at the sides of the ribs; it arises from the nine upper ribs by fleshy digitations, the five lower of which are connected with the internal oblique muscle, and is inserted into the base of the scapula. It draws the scapula forwards.

The *intercostales* fill up the spaces—eleven in number—between the ribs. There are two to each space, an external, and an internal. The external arises from the transverse process of the vertebræ, and the inferior acute edge of the rib, and is inserted into the superior rounded edge of the rib below; its fibres passing obliquely forwards and downwards. The internal arises from the inferior edge of the rib, and is inserted into the superior rounded edge of the rib below; its fibres pass obliquely backwards and downwards. The use of the intercostales is to draw the ribs together.

The *triangularis sterni* is on the posterior surface of the cartilages of the ribs; it arises from the ensiform cartilage and the second bone of the sternum, and is inserted into the cartilage of

the third, fourth, fifth, and sixth ribs. Its use is to depress the ribs, and thereby diminish the cavity of the thorax.

Fig. 12.

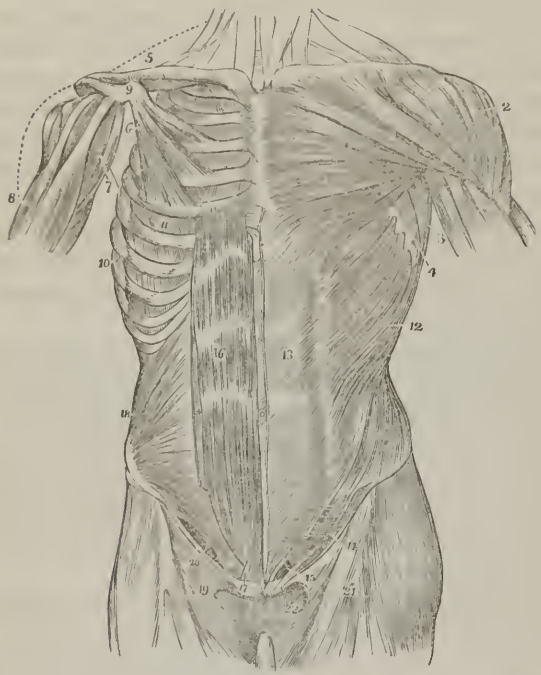


Fig. 12. View of the muscles in front of the thorax and abdomen. 1 Pectoralis major; 2 deltoid; 3 latissimus dorsi; 4 origin of the serratus magnus; 5 subclavius; 6 pectoralis minor; 7 coraco-brachialis; 8 biceps; 9 coracoid process of the scapula; 10 serratus magnus; 11 external intercostal muscle; 12 external oblique; 13 aponeurosis of the external oblique; 14 and 15 Poupart's ligament; 16 rectus; 17 pyramidalis; 18 internal oblique; 19 tendon of the internal oblique and transversalis; 20 passage of the spermatic cord.

Second, muscles of the abdomen.

Between the skin and the muscles of the abdomen is a layer of condensed cellular substance, called the *fascia superficialis*

abdominis: it may be traced upwards over the thorax to the neck and face, and downwards to the thigh. It is generally blended with fat, and in the groin encloses the lymphatic glands, and the external pudic vessels between its laminæ.

There are five pairs of abdominal muscles, viz. the external oblique, internal oblique, rectus abdominis, pyramidalis, and transversalis.

The *obliquus externus* arises from the eight inferior ribs, by tendinous and fleshy heads, the five upper of which are interlocked with those of the serratus anticus, and the three lower with those of the latissimus dorsi; its fibres pass obliquely downwards and forwards, and are inserted into the whole length of the linea alba, and into the anterior half or two-thirds of the crest of the ilium: the tendon also extends anteriorly to the body and symphysis of the pubes, forming thereby Poupart's ligament.

The *linea alba,* in the middle line of the body, is formed by the union of the tendons of the three broad muscles on either side of the abdomen. On either side of the linea alba, and two or three inches from it, is another line formed by the same tendons, called *linea semilunaris.* The use of the external oblique is to compress the viscera of the abdomen, and approximate the pelvis and thorax.

The *obliquus internus* lies beneath the last, and its fibres pass in an opposite direction; it arises from the three inferior spinous processes of the lumbar vertebræ, all those of the sacrum, the crista of the ilium, and the upper half of Poupart's ligament; and is inserted into the cartilages of the six inferior ribs, the ensiform cartilage, and into the whole length of the linea alba. At the linea alba the tendon is divided into two laminæ, which enclose the rectus muscle. Its use is the same as that of the internal oblique.

The *transversalis abdominis* is underneath the last, and arises from the transverse processes of the last dorsal and four upper lumbar vertebræ, the crest of the ilium, the outer half of Poupart's ligament, and from the cartilages of the six or seven lower

ribs; and is inserted into the ensiform cartilage, and linea alba. At the pubes it is inserted in common with the tendon of the internal oblique behind the external abdominal ring. Just above this insertion it is divided into two lamina to enclose the pyramidalis muscle. It compresses the viscera of the abdomen.

The *rectis abdominis* arises from the symphysis and body of the pubes, and passing upwards between the layers of the tendon of the external oblique, increasing in breadth as it ascends, is inserted into the ensiform cartilage, and the fifth, sixth and seventh ribs. It has several tendinous intersections crossing it, called *linea transversæ*. Its use is to draw the thorax towards the abdomen.

The *pyramidalis* is placed at the lower and front part of the rectus, and is about three inches long; it arises from the body of the pubes, and is inserted into the linea alba. Sometimes it is wanting. It gives strength to the lower part of the abdomen.

The *cremaster* is commonly considered as a portion of the internal oblique, as previous to the descent of the testicle it forms the lower edge of this muscle. It envelops the testicle and cord, and is inserted into the tendons of the internal oblique and transversalis. It draws up the testicle.

The *fascia transversalis* is placed between the abdominal muscles and the peritoneum; it is thin and tough, and has an opening in it, to transmit the spermatic cord, which is called the internal abdominal ring.

Third, muscles of the upper and posterior part of the abdomen.

The *diaphragm* is a movable, muscular septum, or division, placed between the cavities of the thorax and abdomen. Above, it is in contact with the pericardium and lungs, and below, with the liver, stomach, and spleen. It consist of two portions, called the greater and lesser muscle. The greater arises from the ensiform cartilage, and the six inferior ribs on each side, its fibres converge towards the centre to be inserted into the cordiform tendon. The lesser has two bellies, called the crura, the one on the right side being the larger; it arises from the second, third,

and fourth lumbar vertebræ, and is also inserted into the cordiform tendon. This tendon, so called from its resemblance to a heart, is large and shining, and nearly horizontal in the erect posture; it has its apex toward the sternum, and its notch towards the spine; its summit is about on a line with the lower end of the second bone of the sternum.

There are three openings or foramina in the diaphragm; the first, situated in the back part of the muscle near the spine, is called the foramem œsophageum. It is elliptical in shape, and transmits the œsophagus and par vagum nerves. The second, called the foramen quadratum, is in the centre of the cordiform tendon and transmits the ascending vena cava. The third, the hiatus aorticus, is in front of the vertebræ, and between the cruræ; it gives passage to the aorta, thoracic duct, and great splanchnic nerves.

The *quadratus lumborum* arises from the crista of the ilium, and is inserted into the last dorsal and all the lumbar vertebræ, and into the lower edge of the last rib. It bends the loins to one side, and pulls down the last rib.

The *psoas parvus* arises from the last dorsal and the first lumbar vertebræ, and is inserted into the linea innominata and fascia iliaca. It draws up the sheath of the femoral vessels. Sometimes it is absent.

The *psoas magnus* arises from the transverse processes of all the lumbar vertebræ, and from the bodies of the four upper lumbar and the last dorsal vertebræ; and is inserted into the lesser trochanter of the femur, and for about an inch below it.

The *iliacus internus* arises from the transverse process of the last lumbar vertebræ, the costa and crest of the ilium, and from the capsula of the hip joint; and is inserted into the tendon of the psoas magnus. It assists the latter muscle in bending the body forwards and drawing the thigh upwards.

Fourth, muscles of the back.

The *trapezius* is a broad muscle immediately under the skin of the back; it arises from the occipital protuberance and the

superior semicircular ridge of the occiput, from the spinous processes of the neck by the ligamentum nuchæ, and from all those of the back; and is inserted into the external third of the clavicle, and the acromion process and spine of the scapula. It draws the scapula towards the spine.

The *latissimus dorsi* covers the whole of the lower part of the back; it arises from the seven inferior spinous processes of the back, from all those of the loins and sacrum, and from three or four of the last ribs; and is inserted into the posterior ridge of the bicipital groove along with the teres minor. It draws the humerus downwards and backwards.

The *serratus inferior posticus* arises from the two inferior spinous processes of the back, and the three superior of the loins, and is inserted into the four inferior ribs. It draws the ribs downwards.

The *rhomboideus minor* arises from the three inferior spinous processes of the neck; and is inserted into the base of the scapula opposite the spine.

The *rhomboideus major* arises from the last spinous process of the neck, and the four superior of the back; and is inserted into the base of the scapula below the spine. These two muscles draw the scapula upwards and backwards.

The *serratus superior posticus* arises from the three inferior spinous processes of the neck, and the two superior of the back; and is inserted into the second, third, fourth and fifth ribs. It draws the ribs upwards.

The *levator scapulæ* arises from the three, four, or five superior transverse processes of the neck; and is inserted into the angle of the scapula and its base above the spine. It draws the scapula upwards.

The *splenius* arises from the spinous processes of the five inferior cervical and the four superior dorsal vertebræ; and is inserted into the occipital bone between the semicircular ridges, and into the transverse processes of the two superior cervical vertebræ. The part which goes to the head is called splenius

capitus, and that which goes to the neck, splenius colli. It draws the head and neck backwards.

Fig. 13.

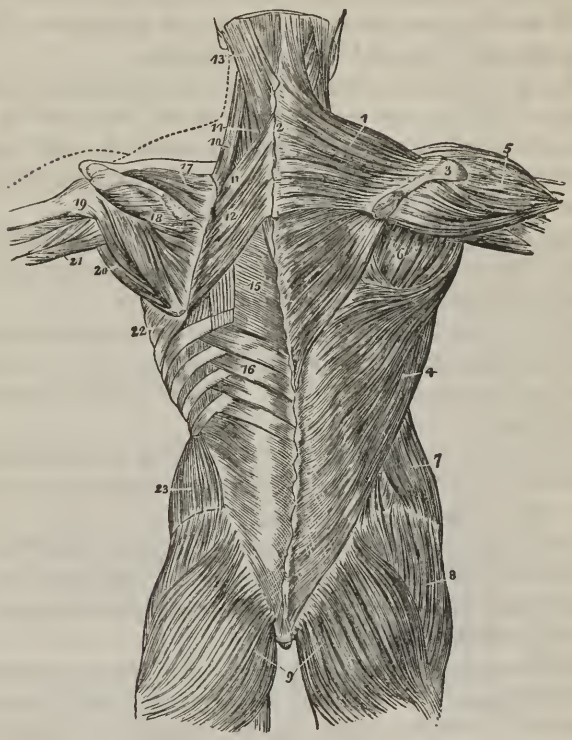


Fig. 13. View of the muscles of the back. 1, 2 The trapezius; 3 acromion process and spine of scapula; 4 latissimus dorsi; 5 deltoid; 6 infraspinatus, and teres minor and major; 7 external oblique; 8 gluteus medius; 9 glutei maximi; 10 levator anguli scapulæ; 11 & 12 rhomboideus minor and major; 13 splenius capitis; 14 splenius colli; 15 vertebral aponuerosis 16 serratus posticus inferior; 17 supra spinatus; 18 infra spinatus; 19 teres minor; 20 teres major; 21 long head of the triceps; 22 serratus magnus; 23 internal oblique.

The *sacro-lumbalis and longissimus dorsi* arise in common from the spinous and transverse processes of the loins and

sacrum, and from the crest of the ilium; and the first is inserted into the angles of the ribs. The latter, which is nearest the spine, is inserted into all the transverse processes of the vertebræ of the back except the first, and into the under-edges of all the ribs beyond their tubercles, except the two last. They keep the spine erect, and draw down the ribs.

The *spinalis dorsi* arises from the three lower spinous processes of the back, and the two upper of the loins; and is inserted into the nine upper spinous processes of the back except the first; it is almost entirely tendinous. Its use is to keep the spine erect.

The *cervicalis descendens* arises from the four superior ribs, and is inserted into the fourth, fifth, and sixth transverse processes of the back. It draws the neck backwards.

The *transversalis cervicis* arises from the five superior transverse processes of the back; and is inserted into the five middle transverse processes of the neck. It draws the head and neck backwards.

The *trachelo-mastoid* arises from the three upper transverse processes of the back, and the five inferior of the neck; and is inserted into the mastoid process.

The *complexus* arises from transverse processes of the four inferior cervical, and of the superior dorsal vertebræ; and is inserted into the os occipitus between its semicircular ridges. It draws the head backwards.

The *semi-spinalis cervicis* arises from the transverse processes of the six upper dorsal vertebræ; and is inserted into the spinous processes of the five middle cervical vertebræ. It draws the neck obliquely backwards.

The *semi-spinalis dorsi* arises from the transverse processes of the seventh, eighth, ninth, and tenth dorsal vertebræ, and is inserted into the spinous processes of the two lower cervical, and five upper dorsal vertebræ. It draws the spine obliquely backwards.

The *multifidus spinæ* arises from the oblique and transverse processes of all the sacral, lumber and dorsal vertebræ, and is

inserted into the spinous processes of all the vertebræ of the loins and back, and of the four inferior of the neck. It twists the spine backwards, and keeps it erect.

Fig. 14.

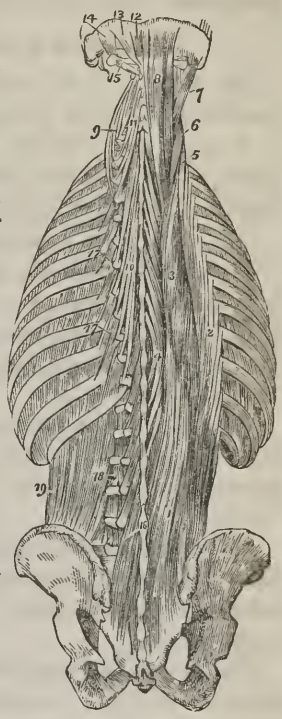


Fig. 14. Posterior views of the neck, thorax, abdomen, and pelvis. 1, 2, 3 Sacro-lumbalis, and longissimus dorsi; 4 spinalis dorsi; 5 cervicalis descendens; 6 transversalis cervicis; 7 trachelo mastoid; 8 complexus; 10 semi-spinalis dorsi; 11 semi-spinalis cervicis; 12 rectus capitis posticus major; 13 rectus capitis posticus minor; 14 obliquus superior; 15 obliquus inferior; 16 multifidus spinæ; 17 levatores costarum; 18 inter-transversalis.

The *rectus capitis posticus major* arises from the spinous process of the dentata, and is inserted into the inferior semicircular ridge of the occiput and a part of the surface below it. It turns the head, and draws it backwards.

The *rectus capitis posticus minor* arises from the tubercle of the atlas, and is inserted into the occiput at, and below the inferior semicircular ridge. It draws the head backwards.

The *obliquus superior* arises from the transverse process of the atlas, and is inserted into the outer end of the inferior semicircular ridge of the occiput. It draws the head backwards.

The *obliquus inferior* arises from the spinous process of the dentata, and is inserted into the transverse process of the first cervical vertebræ. It rotates the first vertebræ on the second.

The *inter-spinales* are short muscles, placed between the spinous processes of all the vertebræ. They are double in the neck; tendinous in the back; and single and well marked in the loins. They keep the spine erect.

The *inter-transversalis* are placed between all the transverse processes. They draw these processes together.

The *levatores costarum*. There are twelve of these small muscles on either side of the spine; they arise from the transverse processes of the last cervical, and the eleven superior dorsal vertebræ, and are inserted into the upper edge of the two next ribs below. They elevate the ribs.

Muscles of the upper extremities.

The muscles of the upper extremity are covered with the brachial fascia, which extends from the shoulder to the hand. It forms at the wrist the anterior and posterior annular ligaments, which holds down the flexor tendons of the hand and fingers. In the hand it forms the palmar aponeurosis.

First, muscles of the shoulder.

The *deltoid* passes over the top of the shoulder, giving to it its rotundity: it arises from the spine of the scapula, the acromium process, and the outer third of the clavicle, and is inserted into the triangular roughness near the middle of the humerus. It raises the humerus.

The *supra-spinatus scapulæ* arises from the whole of the fossa supra-spinata, and is inserted into the inner facet of the greater tuberosity of the humerus. It raises the arm, and turns it outwards.

The *infra-spinatus scapulæ* arises from the whole of the fossa infra-spinata, and is inserted into the middle facet of the greater tuberosity of the humerus. It rolls the humerus outwards and backwards.

The *teres minor* arises from the lesser costa of the scapula, and is inserted into the outer facet of the greater tuberosity of the humerus. It rotates the humerus outwards, and draws it downwards and backwards.

The *teres major* arises from the posterior surface of the angle of the scapula, and from a part of its inferior costa; and is inserted into the posterior ridge of the bicipital groove along with the tendon of the latissimus dorsi.

The *subscapularis* arises from the whole of the inferior or thoracic surface of the scapula, and is inserted into the lesser

tuberosity of the humerus. It rotates the humerus inwards and draws it downwards.

Second, muscles of the arm.

The *biceps flexor cubiti* has two heads, one the long head, arising from the superior extremity of the glenoid cavity of the scapula, and passing through the joint and bicipital groove; the other, called the short head, arising from the coracoid process of the scapula. It is inserted into the posterior rough parts of the tubercle of the radius. Its use is to flex the fore-arm.

The *coraco-brachialis* arises in common with the short head of the biceps from the middle facet of the coracoid process of the scapula, and is inserted by a rough ridge into the internal side of the middle of the humerus. It draws the arm upwards and inwards.

The *brachialis internus* arises from the anterior and lower half of the humerus, and is inserted into the rough surface at the root of the coronoid process of the ulna. It flexes the fore-arm.

The *triceps extensor cubicti* arises by three heads, the first, called the longus, from a rough ridge on the inferior edge of the scapula; the second, the brevis, from a ridge on the back part of the humerus just below the head; and the third, the brachialis internus, from the inner side of the humerus near the insertion of the teres major. It is inserted into the back-part of the olecranon process. It extends the fore-arm.

The *anconeus* arises from the external condyle of the humerus, and is inserted into the ulna below the olecranon process. It extends the fore-arm.

Third, muscles of the fore-arm.

There are eighteen of these; eight on the front of the fore-arm, which are the flexors, and ten on the back part, which are the extensors. The last arise principally from the external condyle.

On the front are:

The *pronator radii teres*, arising from the internal condyle of

the humerus, and the coronoid process of the ulna; and is inserted into the middle and back part of the radius.

The *flexor carpi radialis*, arising from the internal condyle of the humerus, the adjacent fascia, and from the upper part of the ulna, and is inserted into the base of the metacarpal bone of the fore-finger. It flexes the hand.

Fig. 15.

Fig. 16.

Fig. 15. View of the superficial muscles on the front of the fore-arm. 1 Lower part of the biceps; 2 part of the brachialis anticus; 3 part of the triceps; 4 pronator radii teres; 5 flexor carpi radialis; 6 palmarus longus; 7 part of the flexor sublimus digitorum; 8 flexor carpi ulnaris; 9 palmar fascia; 10 palmaris brevis muscle; 11 abductor pollicis; 12 part of the flexor brevis pollicis; 13 supinator longus; 14 extensor ossis metacarpi, and extensor primi internodii pollicis, curving around the edge of the fore-arm.

Fig. 16. View of the deep seated muscles on the front of the fore-arm. 1 The internal lateral ligament of the elbow-joint; 2 anterior ligament; 3 orbicular ligament of the head of the radius; 4 flexor profundis digitorum muscle; 5 flexor longus pollicis; 6 pronator quadratus; 7 adductor pollicis; 8 dorsal interosseous muscle of the middle finger and palmar interrosseous of the ring finger; 9 dorsal interrosseus muscle of the ring finger and palmar interosseous of the little finger.

The *flexor carpi ulnaris*, arising from the internal condyle and from the ridge at the internal side of the ulna; and is in-

serted into the os pisiforme, and sometimes also into the base of the metacarpal bone of the little finger. It bends the hand, and draws it towards the ulna.

The *flexor sublimis digitorum perforatus* arises from the internal condyle of the humerus, the coronoid process of the ulna, and the tubercle of the radius; and is inserted by four tendons into the second phalanges of the fingers. It bends the hand and fingers.

The *flexor profundus digitorum perforans* arises from the anterior flat surface of the ulna, from the coronoid process, and the interosseous ligament; and is inserted by four tendons, which pass through the slit in those of the flexor sublimis, into the third phalanges of the fingers. It bends the last phalanges of the fingers, and also the hand.

The *flexor longus pollicis* arises from the middle two-thirds of the radius, the interosseous ligament, and the internal condyle of the humerus; and is inserted into the base of the second phalanx of the thumb. It bends the last joint of the thumb.

The *pronator quadratus* arises from the inner surface of the ulna, near its lower extremity, and passing obliquely across the fore-arm, is inserted into the corresponding surface of the radius. It rotates the radius inwards.

On the back of the fore-arm are:

The *supinator radii longus*, arising from the ridge leading to the external condyle; and is inserted into a rough ridge just above the styloid process of the radius. It rotates the radius outwards.

The *extensor carpi radialis longus* arising from the ridge of the external condyle of the humerus; and is inserted into the posterior part of the root of the metacarpal bone of the fore-finger. It extends the hand.

The *extensor carpi radialis brevis*, arising from the external condyle of the humerus, and from the external lateral ligament; and is inserted into the posterior part of the base of the metacarpal bone of the second finger. It extends the hand.

The *extensor carpi ulnaris*, arising from the external condyle

and from the fascia, is inserted into the ulnar side of the base of the metacarpal bone of the little finger. It extends the hand.

Fig. 17.

Fig. 17. View of the muscles on the back of the fore-arm. 1 Lower part of biceps; 2 part of the brachialis anticus; 3 insertion of the triceps into the oleeranon; 4 supinator longus; 5 extensor carpi radialis longior; 6 extensor carpi radialis brevior; 7 tendons showing the insertion of the two last muscles; 8 extensor communis digitorum; 9 extensor minimi digiti; 10 extensor carpi ulnaris; 11 anconeus; 12 part of the flexor carpi ulnaris; 13 extensor ossis metacarpi and extensor primi internodii; 14 extensor secundi internodii; 15 posterior annular ligament, beneath which are the tendons of the extensor communis.

The *extensor digitorum communis*, arising from the external condyle; and is inserted by four tendons, which are connected by slips, near the roots of the fingers, into all the phalanges of the fingers. It extends the joints of the fingers.

The *supinator radii brevis*, arising from the external condyle and from the ridge on the posterior radial edge of the ulna; and is inserted into the tubercle and the oblique rough ridge of the radius. It rotates the radius outwards.

The *extensor ossi metacarpi pollicis manus*, arising from the posterior part of the ulna, the interosseous ligament, and from the back part of the radius; and is inserted into the base of the metacarpal bone of the thumb, and into the trapezium. It extends the metacarpal bone of the thumb.

The *extensor minor pollicis manus*, arising from the back of the ulna below its middle and from the interosseous ligament; and is inserted into the first phalanx of the thumb. It extends the first phalanx.

The *extensor major pollicis manus*, arising from the back of the ulna above its middle, the interosseous ligament and the

back of the radius; and is inserted into the base of the second phalanx of the thumb. It extends the second phalanx.

The *indicator*, arising from the back of the ulna and from the interosseous ligament; and is inserted into the back of the fore-finger, as far as the base of the third phalanx. It extends the fore-finger.

Of the Muscles of the Hand.

The *palmaris brevis* is just beneath the skin at the inner side of the hand; it arises from the anterior ligament of the wrist, and from the palmar aponeurosis; and is inserted into the skin at the inner margin of the hand. It contracts the skin of the hand.

The *lumbricales* are four small muscles, resembling earth-worms, which arise from the tendons of the flexor profundus, and are inserted into the radial side of the first phalanx of each finger. They bend the first phalanges.

The *abductor pollicis manus* arises from the annular ligament and from the ends of the scaphoid and trapezium; and is inserted into the base of the first phalanx of the thumb. It draws the thumb from the fingers.

The *opponens pollicis* arises from the trapezium and the annular ligament; and is inserted into the radial edge of the metacarpal bone of the thumb. It draws the metacarpal bone inwards.

The *flexor brevis pollicis manus* has two bellies, the first head arises from the trapezium, trapezoides, and annular ligament, and is inserted into the outer side of the first phalanx of the thumb; the second head arises from the magnum, unciforme, and the base of the metacarpal bone of the middle finger, and is inserted into the inner side of the base of the first phalanx of the thumb. The sesamoid bones are included in these tendons. It bends the first phalanx to the thumb.

The *adductor pollicis manus* arises from the ulnar margin of the metacarpal bone of the middle-finger, and is inserted into

the inner side of the base of the first phalanx of the thumb. It draws the thumb towards the fingers.

Fig. 18.

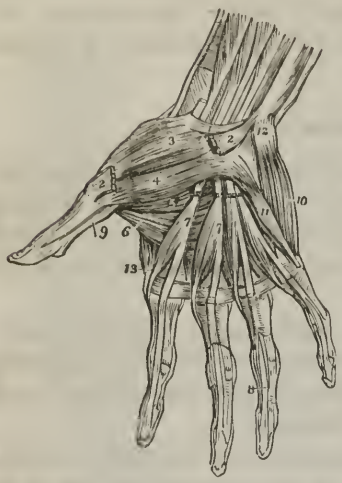


Fig. 18. View of the muscles of the palm of the hand. 2 Abductor pollicis manus; 3 opponens pollicis; 4, 5 flexor brevis pollicis manus; 6 adductor pollicis manus; 77 lumbricales; 10 abductor minimi digiti manus; 11 flexor parvus minimi digiti.

The following three muscles are situated at the ulnar side of the hand, constituting the ball of that side.

The *abductor minimi digiti manus* arises from the pisiform bone and annular ligament, and is inserted into the ulnar side of the first phalanx of the little finger. It draws the little finger from the rest.

The *flexor parvus minimi digiti manus* arises from the uncinform bone and annular ligament, and is inserted into the ulnar side of the base of the first phalanx of the little finger. It bends the little finger.

The *adductor metacarpi minimi digiti* arises from the uncinform process and annular ligament, and is inserted into the metacarpal bone of the little finger along its whole length. It brings the metacarpal bone towards the wrist.

There are seven interosseous muscles, which fill up the interstices of the metacarpal bones. Three of them are adductors and placed on the palmar side; and four are abductors placed on the dorsal side.

The *adductors* arise from the base of the metacarpal bone of one finger, beginning at the index, and are inserted into the base of the first phalanx of the same finger.

The *adductors* are penniform, and arise by two heads from the adjoining sides of the metacarpal bones, and are inserted

into the bases of the first phalanges; two of them, the second and third, go to the middle finger.

Of the Muscles of the lower extremities.

Like the rest of the body the lower extremities are invested by cellular membrane, reaching from the crest of the ilium to the foot. It has received the general name of *fascia lata*, and is exceedingly strong and dense. That portion in front of the thigh is termed *iliac* and *pubic;* that which surrounds the knee *involucrum;* that of the leg *crural*; and that in the sole of the foot *plantar fascia*. In front of the ankle it forms the annular ligament, and under the sinuosity of the os calcis, where it binds down the flexor tendon, the ligamentum lancinatum. It also furnishes sheaths for the muscles.

The *tensor vaginæ femoris* muscle arises from the anterior superior spinous process of the ilium; and is inserted into the fascia of the thigh. It makes the fascia tense, and rotates the foot inwards.

The *sartorius* arises from the anterior superior spinous process of the ilium; and is inserted into the inner side of the head of the tibia. It is the longest muscle in the body. It bends the leg, and draws it inwards.

The *rectus femoris* arises from the anterior inferior spinous process of the ilium, and is inserted into the upper surface of the patella, and through the ligament of the patella into the head of the tibia. It extends the leg.

The *vastus externus* arises from the trochanter major and linea aspera, and is inserted into the outer and upper part of the patella. It extends the leg.

The *vastus internus* arises from the whole length of the linea aspera, and covering the entire inside of the thigh is inserted into the internal edge of the tendon of the rectus, and into the external and upper part of the patella. It likewise extends the leg.

The *cruræus* arises from the front of the thigh and from the

linea aspera; and is inserted into the upper surface of the patella. It extends the leg.

The four last named muscles form a common tendon (the ligamentum patellæ), in which is included the patella, before it is inserted into the head of the tibia. In consequence of this arrangement, and of these muscles, having a common use, they are often described as the *quadriceps femoris.*

The *gracilis* arises from the front and ramus of the pubes, and is inserted into the inside of the head of the tibia. It flexes the leg.

The *pectineus* arises from the upper face and front of the pubes, and is inserted into the linea aspera below the trochanter minor. It draws the thigh inwards and forwards.

The *adductor longus* arises from the upper front part of the pubes, and is inserted into the inner edge of the middle third of the linea aspera.

The *adductor brevis* arises from the body and ramus of the pubes, and is inserted into the inner edge of the linea aspera, along its upper third.

The *adductor magnus* arises from the body of the pubes, and the ramus of the pubis and ischium; and is inserted into the whole length of the linea aspera. These three adductors have the same use, that of drawing the thigh forwards and inwards.

The *gluteus magnus* or *maximus* arises from the crista of the ilium, the sides of the sacrum and coccyx, and from the great sacro-sciatic ligament; and is inserted into the upper part of the linea aspera, and the fascia of the thigh. It draws the thigh backwards, and keeps the trunk erect.

The *gluteus medius* arises from the crest of the ilium, its dorsum between the crest and semicircular ridge, from the space between the anterior spinous processes, and from the fascia femoris; and is inserted into the upper surface of the trochanter major and the shaft of the bone in front of it. It draws the thigh backwards and outwards.

The *gluteus minimus* arises from the dorsum of the ilium between the semicircular ridge and capsular ligament; and is

inserted into the upper part of the trochanter major. It abducts the thigh, and also rotates it inwards.—The three gluteii muscles form most of the fleshy part of the hip.

The *pyriformis* arises from the anterior face of the second, third and fourth bones of the sacrum, and is inserted into the superior middle part of the trochanter major. It rotates the limb outwards.

The *Gemini* are two small muscles; the upper arises from the root of the spinous process of the ischium; the lower from the back part of the tuberosity of the ischium; they are both inserted into the root of the trochanter major. They also rotate the limb outwards.

The *obturator internus* arises from the margin of the thyroid foramen, the posterior face of the thyroid ligament, and from the iliac fascia; and is inserted into the pit on the back part of the femur at the root of the trochanter major. It rotates the limb outwards.

The *quadratus femoris* arises from the tuberosity of the ischium, and is inserted into the ridge between the two trochanters of the os femoris. It rotates the limb outwards.

The *obturator externus* arises from the anterior margin of the thyroid foramen, and from the anterior face of the thyroid ligament; and is inserted into the cavity at the root of the trochanter major of the os femoris. It rotates the thigh outwards.

The *biceps flexor cruris* forms the outer hamstring; it arises by two heads; a long one from the tuberosity of the ischium in common with the semi-tendinosus, and a short one from the lower part of the linea aspera. It is inserted into the head of the fibula. It flexes the leg on the thigh.

The *semi-tendinosus* arises from the tuberosity of the ischium, and is inserted into the side of the tibia just below its tubercle. It flexes the leg on the thigh.

The *semi-membranosus* arises from the outer and upper part of the tuberosity of the ischium; and is inserted into the inner and back part of the tibia just below the joint. It flexes the leg on the thigh.

Muscles of the Leg.

The *tibialis anticus* arises from the outer side of the head and from the spine of the tibia, and from the interosseous ligament; and is inserted, at the inner side of the sole of the foot, into the base of the internal cuneiform bone and the base of the metacarpal bone of the great toe. It bends the foot, and presents the sole obliquely outwards.

The *extensor longus digitorum pedis* arises from the head of the tibia, from the head and anterior margin of the fibula, and from the interosseous ligament; and is inserted after dividing into four tendons, into the phalanges of the toes. It extends the toes, but flexes the foot.

The *peroneus tertius* arises from the lower third of the anterior angle of the tibia; and is inserted into the base of the metatarsal bone of the little toe. It is rather a part of the extensor longus than a distinct muscle. It assists in bending the foot.

The *extensor proprius pollicis pedis* arises from the lower three-fourths of the fibula, and the interosseous ligament; and is inserted into the base of the first and second phalanx of the great toe. It extends the great toe.

The *peroneus longus* arises from the outside of the head and upper third of the fibula; and is inserted into the base of the metatarsal bone of the great toe. It extends the foot, and inclines the sole outwards.

The *peroneus brevis* arises from the lower two-thirds of the outer surface of the fibula; and is inserted into the base of the metatarsal bone of the little toe. It extends the foot and presents the sole obliquely downwards.

The *gastrocnemius* has two heads, one of which arises from each of the condyles of the humerus; it is inserted by the tendo Achillis into the os calcis.

The *soleus* arises from the posterior part of the upper two-thirds of the fibula, and from the middle third of the tibia; and is inserted into the tendo Achillis.

Fig. 19. View of the anterior muscles of the leg. 1 Tendon of the quadriceps femoris; 2 anterior angle of the tibia; 3 tibialis anticus; 4 extensor longus digitorum pedis; 5 extensor proprius pollicis pedis; 6 peroneus tertius; 7 peroneus longus: 8 peroneus brevis; 9, 9 borders of the soleus; 10 gastrocnemius.

Fig. 20. View of the deep seated muscles on the back of the leg. 1 Lower extremity of the femur; 2 ligament of Winslow; 3 tendon of the semi-membranosus; 4, 5 internal and external lateral ligaments; 6 popliteus muscle; 7 flexor longus digitorum; 8 tibialis profundus; 9 flexor longus pollicis; 10 peroneus longus; 11 peroneus brevis; 12 lower end of the tendo Achillis; 13 tendons of the tibialis posticus and flexor longus digitorum. To show these muscles, the gastrocnemius, plantaris and soleus muscles have been removed.

Fig. 19.

Fig. 20.

The *plantaris* arises by a very long tendon from the femur, just above the external condyle; and is inserted into the os calcis in front of the tendo Achillis.

The last three muscles have the same action, to wit, to extend the foot. They constitute the calf of the leg and are sometimes called the *triceps suræ*.

The *popliteus* arises from the external face of the external condyle, and is inserted into the oblique ridge on the back of the tibia, just below its head. It bends the leg, and rotates it inwards.

The *flexor longus digitorum pedis perforans* arises from the back of the tibia below its oblique ridge, and after dividing into

four tendons is inserted into the bases of the last phalanges of the four lesser toes. These tendons perforate those of the flexor brevis. It flexes the toes, and extends the foot.

The *flexor longus pollicis pedis* arises from the posterior face of the tibia, commencing about three inches below its head, and continuing nearly to the ankle; and is inserted into the second phalanx of the great toe. It bends the great toe.

The *tibialis posticus* arises by two heads from the tibia and fibula, also from the interosseous ligament; and is inserted into the tuberosity of the scaphoid bone. It extends the foot.

Muscles of the Foot.

The *extensor brevis digitorum pedis* arises from the greater apophysis of the os calcis; and is inserted by four tendons into the backs of the four greater toes. Its tendons join those of the extensor longus. It extends the toes.

The *flexor brevis digitorum pedis* arises from the tuberosity of the os calcis and the plantar fascia, and is inserted into the second phalanges of the four smaller toes. Its tendons are perforated by those of the flexor longus. It bends the second joint of the toes.

The *flexor accessorius* arises from the inside of the sinuosity, and the front of the tuberosity of the os calcis; and is inserted into the outside of the tendon of the os calcis at its division. It assists in flexing the toes.

The *lumbricales pedis* are four small muscles, which arise from the tendon of the flexor longus; and are inserted into the inside of the first phalanx of each of the lesser toes. They assist in flexing the toes.

The *abductor pollicis pedis* arises from the internal tuberosity of the os calcis, the internal side of the navicular and internal cuneiform bones, and from the plantar fascia; and is inserted into the inner side of the base of the first phalanx of the great toe, including the internal sesamoid bone. It draws the great toe from the others.

The *flexor brevis pollicis pedis* has two bellies; it arises from the calcaneo-cuboid ligament, and the internal cuneiform bone; and is inserted by two tendons into the internal and external sesamoid bones, and into the first phalanx of the great toe.

The *adductor pollicis pedis* arises from the calcaneo-cuboid ligament, and the basis of the second, third, and fourth metatarsal bones of the lesser toes; and is inserted into the external sesamoid bone, and the tendon of the flexor brevis. It draws the great toe towards the others.

The *abductor minimi digiti pedis* arises from the outer tuberosity of the os calcis, and the metatarsal bone of the little toe; and is inserted into the base of the first phalanx of the little toe. It draws the little toe from the others.

The *flexor brevis minimi digiti pedis* arises from the calcaneo-cuboid ligament, and the fifth metatarsal bone; and is inserted into the head of the metatarsal bone, and the base of the first phalanx of the little toe. It bends the little toe.

The *transversalis pedis* is a small muscle, which lies across the anterior extremities of the metatarsal bones; it arises from the capsular ligaments of the first joints of the fourth and fifth toes; and is inserted into the external sesamoid bone. It approximates the heads of the metatarsal bones.

The *interosseus muscles* are seven in number; four of them are upon the dorsal, and three upon the plantar surface of the foot. There are two to the first smaller toe, two to the second, two to the third, and one to the fourth or little toe. The *dorsal interossei* arise by double heads from the adjacent sides of the metatarsal bones; and are inserted into the base of the first phalanx. The first is an *adductor* being inserted into the *inner* side of the second toe; the other three are inserted into the *outer* side of the second, third, and fourth toes, and are consequently abductors.

The *plantar interossei* arise from the base of the metatarsal bones of the three outer toes; and are inserted into the inner side of the base of the first phalanx of the same toes. They draw the toes inwards, or *adduct* them.

Organs of Digestion.

Mouth.—The mouth is bounded anteriorly and laterally by the lips and cheeks; its roof is formed by the hard and soft palate; and its floor by the mylo-hyoid muscles; posteriorly it extends to the pharynx, and communicates with the fauces. The space between the lips and the teeth is sometimes called the vestibule of the mouth. The mouth is lined by a mucous membrane, beneath which are a number of muciparous glands. This membrane is thrown into folds (frena) at several points, the one beneath the tongue is called frenum linguæ.

The *lips* (labia) are composed of muscular fibres and fat, and covered externally by skin. The upper is longer and thicker than the lower, and has a vertical depression on the middle front surface, called *philtrum*.

The *gums* are formed of the lining membrane of the mouth much thickened.

Tongue.—The tongue is the special organ of taste, and is also of material importance in speech and mastication. It is a muscular body, symmetrical, oblong, and flattened; its size and shape are variable.

The posterior extremity is called its base, or root, the anterior its point, or tip, and the middle its body. The root is attached to the hyoid bone.

The mucous covering is very thick on the upper surface of the tongue, and thin on the lower. On the upper surface are a number of large papillæ; those on the posterior border, eight or nine in number, arranged like the letter V, are the largest, and called the *papillæ maximæ;* others are termed *capitatæ, mediæ, villosæ,* and *filiform;* the latter are the smallest, and are found principally at the middle of the tongue. The papillæ mediæ are the most abundant. The structure of all is the same. Their orifices are easily seen by the naked eye.

The following muscles compose the tongue: the *stylo-glossus,* the *hyo-glossus,* the *genio-hyo-glossus, lingualis, superficialis linguæ, transversalis linguæ,* and *verticales linguæ.* The first three form the principal part of its bulk.

Palate.—The palate is divided into two parts, the *hard*, and the *soft* palate. The first separates the mouth from the nose, and is composed of the palate processes of the upper maxillary and palate bones, covered by the common lining membrane of the mouth. It has transverse ridges extending to the alveolar processes, and also one in the median line.

The second, or *soft* palate, called also pendulous palate, consists of a loose membrane stretched transversely across the back of the mouth, at the posterior margin of the hard palate. Its middle portion, called the uvula, is free and projects downwards for a half or three-fourths of an inch; on each side of the uvula there are two crescenting folds of mucous membrane, called the *lateral half-arches*, the space between which is the *fauces*. Between the anterior and posterior arches on each side are the tonsil glands, which consist of a collection of mucous follicles. Each *tonsil* is about the size and shape of an almond.

There are several small muscles entering into the composition of the soft palate.

The *constrictor isthmi faucium*, a small muscle on each side, arising from the middle of the anterior half-arch, and inserted into the side of the root of the tongue. It diminishes the opening into the pharynx.

The *palato-pharyngeus*, is situated in the posterior half-arch, arising from its middle to be inserted into the side of the pharynx. It draws the soft palate downward and the pharynx upwards.

The *circumflexus*, or *tensor palati*, arises from the spinous process of the sphenoid bone and the Eustachian tube, and is inserted into the middle of the soft palate, and into the crescentic edge of the palate bone; its tendon winds round the hook of the internal pterygoid process. It extends or spreads out the palate.

The *levator palati* arises from the petrous portion of the temporal bone and the Eustachian tube, and is inserted into the soft palate. It draws the palate upwards.

The *azygos uvula* is in the centre of the soft palate and uvula. It shortens the uvula.

Salivary Glands of the Mouth.

There are three salivary glands situated on each side of the neck, bordering on the mouth, for the secretion of saliva. They are the parotid, submaxillary and sublingual. Their color is of a light pink.

The *parotid* is the largest, and is very irregular in shape. It occupies the space behind the ramus of the lower jaw, and the mastoid process. Externally it is covered by the skin; it is of a lobulated structure. Its duct, called the duct of Steno, is about the size of a crow's quill, and passes along the outer face of the masseter muscle, in a line drawn from the lobe of the ear to the end of the nose, and perforates the cheek by a very small orifice, opposite the second molar tooth of the upper jaw. The external carotid artery and the temporal vein pass up through its deeper portion; and the portia dura nerve also traverses it from behind forward.

The *submaxillary* gland is not more than half the size of the former, and is somewhat ovoidal in form, and lobulated in structure. It is situated in the depression on the inner face of the lower jaw, and covered externally by the skin, superficial fascia and platisma myoid muscle.

Its duct, called the duct of Wharton, empties into the mouth, under the tongue, at the anterior margin of the frænum linguæ, by a very small orifice.

The *sublingual* gland, which is smaller than the last, oblong in shape, lobulated in structure, is situated under the tongue, covered only by the lining membrane of the mouth. It discharges by several ducts near the duct of the submaxillary gland.

The Pharynx and Œsophagus.

The *pharynx* is a large membranous cavity situated between the vertebral column and the posterior part of the nose and mouth, and extending from the base of the cranium to the fourth or fifth cervical vertebræ. It is about five inches long, and funnel shaped, being larger above than below; its muscular attachments keep it always open.

It has three coats, a muscular, a cellular and a mucous one. The muscular coat is internal, and consists of three muscles on each side, placed one above the other, and called constrictors.

The *inferior constrictor* arises from the side of the cricoid and thyroid cartilages, and is inserted into its fellow of the opposite side on the back of the pharynx; the upper fibres are oblique, the lower horizontal.

The *middle constrictor* arises from the cornu of the os hyoides and the lateral thyreo-hyoid ligament, and is inserted into its fellow at the posterior median line.

The *superior constrictor* arises from the pterygoid process of the sphenoid bone, from the upper and lower jaw, from the buccinator muscles and the root of the tongue; and is inserted into its fellow behind, and also into the cuneiform process of the os occipitus. Its fibres are more horizontal than those of its fellows.

The successive contractions of these muscles convey the food from the mouth into the œsophagus.

The *stylo-pharyngeus muscles*, described among those of the neck, by contracting shortens the pharynx.

The *cellular* coat connects the muscular with the mucous, and merely serves for the transmission of nerves and blood-vessels.

The *internal* or *mucous* coat, which is a continuation of that of the mouth, nose and Eustachian tube, like it is covered by a delicate epidermis, and studded with mucous follicles and glands.

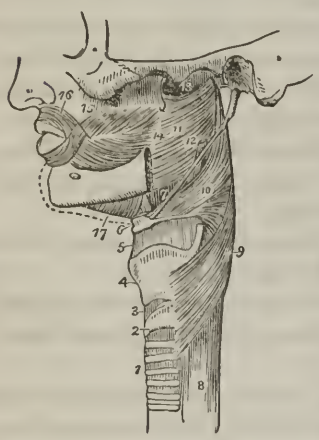
The *Œsophagus* is the canal situated between the spine and larynx, which conveys the food from the pharynx to the stomach. Its length is about nine or ten inches; and its diameter when inflated, near an inch, though this is not uniform, as it gradually increases as it descends. In descending, it passes through the posterior mediastinum, and at its lower part, where it passes through the diaphragm, inclines slightly to the left side. Its upper part is the narrowest portion of the alimentary canal; and consequently foreign bodies, if not arrested in the neck, readily pass through the remainder of the alimentary canal.

It is composed, like the pharynx, of three coats, a muscular,

a cellular, and a mucous. The *muscular* is external, and thicker than any other portion of the canal; it consists of two layers, the fibres of the external layer being longitudinal; those of the internal, circular.

The *cellular* coat unites the others. The *mucous* coat is continuous with that of the pharynx, has a thick epithelium, contains numerous mucous glands and follicles, and when in a state of rest, presents a number of longitudinal folds.

Fig. 21.



Deglutition, or swallowing, is effected by the contraction of the longitudinal muscular fibres, which shorten the passage, and by the successive contractions of the circular fibres from above downwards. In vomiting, the contractions commence below and go upwards.

Fig. 21. Lateral view of the pharynx. 1 Trachea; 2 cricoid cartilage; 3 crico-thyroid membrane; 4 thyroid cartilage; 5 thyro-hyoid membrane; 6 os hyoides; 7 stylo-hyoid ligament; 8 œsophagus; 9 inferior constrictor; 10 middle constrictor; 11 superior constrictor; 12 stylo-pharyngeus muscle; 13 upper concave margin of the superior constrictor; 14 pterygo-maxillary ligament; 15 buccinator muscle; 16 orbicularis oris; 17 mylo-hyoideus.

Of the Abdominal Viscera.

The cavity of the abdomen extends from the diaphragm above to the pelvis below; and is divided for descriptive purposes into nine different regions, by the drawing of two parallel vertical lines through the anterior inferior spinous processes of the ilia, and intersecting these by two other horizontal lines, the one drawn over the crests of the ilia, and the other over the most prominent part of the cartilages of the ribs. This makes three regions above, three in the middle, and three below. The region in the centre of the upper row is called the *epigastric*, and contains the left lobe of the liver and a portion of the stomach;

those on either side are termed the *right* and *left hypochondriac*, the first contains the right lobe of the liver, and the second contains the spleen, and a portion of the stomach and liver. The central region of the middle row is called the *umbilical*, and contains the small intestines; those on the sides are the *right* and *left lumbar*, the first contains the right kidney and ascending colon, the second the left kidney and descending colon. The region in the centre of the lower row, is the *hypogastric*, and contains a portion of the small intestines and the bladder; those on the sides are the right and left iliac regions, or the iliac fossæ, of which the first or right contains the *cæcum* or *caput coli*, and the second the sigmoid flexure of the colon.

Peritoneum.—The whole of the interior surface of the abdomen is lined, and the contained viscera covered by a thin, transparent, serous membrane, called the peritoneum, which, like all the serous membranes, is a closed sack. Its office is to secrete a small quantity of fluid to lubricate the viscera, and thus enable them to move readily upon each other, and the walls of the cavity; it also forms ligaments and connections by which the viscera are held in their places. Although the viscera appear to be contained within the cavity of the peritoneum, they are not so in reality, but are all on its outside. A familiar and good illustration of the manner in which the various viscera are covered by the peritoneum, is afforded in the application of a double night cap to the head. One part of the cap is close to the head and compares with the peritoneal coat of one of the viscera; the other is loose and compares with the peritoneum, where it comes in contact with the walls of the abdomen.

Those portions of the peritoneum, which pass between one viscus and another, generally consists of two lamina, and are called *omenta*.

There are four of these processes or omenta, viz. the *lesser omentum*, or gastro-hepatic, passing between the stomach and liver, and attached to the lesser curvature of the stomach; the *great omentum*, or gastro-colic, which extends between the stomach and colon, being attached to the greater curvature of the

former, and including the latter between its lamina—it is the largest of the omenta, and is spread over the intestines like an apron — it is known as the *caul*, and in corpulent persons contains a great deal of fat; the *colic-omentum* or *mesocolon*, which holds the large intestine to the posterior wall of the abdomen; and the *gastro-splenic*, which extends from the stomach to the spleen.

The *mesentery* serves to connect the small intestines to the walls of the abdomen; it consists of two laminæ of peritoneum, and its inferior edge equals in length the entire intestine. The superior mesenteric arteries and veins, lymphatic glands and vessels, branches of the sympathetic nerve, fat, &c., are contained between the lamina of the mesentery.

Stomach.—The stomach is situated in the epigastric and left hypochondriac regions. It is a conoidal sac, having an upward curve; it has an anterior and posterior face, being somewhat flattened in front and behind; two curvatures, the upper of which is the lesser, and the lower the greater; two orifices, of which one, called the *cardiac*, is at the superior part of the left extremity, and is a continuation of the œsophagus into the stomach, and the other, the *pyloric*, is at the right extremity, and is continuous with the small intestine; and two extremities, of which the left is much the largest, and is a rounded cul-de-sac or tuberosity, and the left is a gradual diminution of the organ from its middle to the duodenum. Near the right end of the stomach is a dilatation, which is sometimes called the antrum pylori.

The stomach is retained in its place by the hepatico-gastric and the gastro-splenic omentum, and by its continuity with the œsophagus and duodenum. Its dimensions are variable, depending much upon the mode of life; generally, however, its capaciousness is between that of a pint and a quart. It is composed of four coats, a peritoneal, muscular, cellular, and mucous.

The *peritoneal coat* affords a complete investment for the stomach, and is closely attached to it, except at the curvatures where its looseness allows of the distention of the other coats.

The *muscular coat* is thicker than that of the intestines, but not so thik as that of the œsophagus; its fibres are arranged both in a longitudinal and circular direction. The longitudinal fibres are chiefly found along the lesser curvature, and the circular fibres, which cover the entire organ, are most numerous near the pyloric extremity.

Fig. 22.

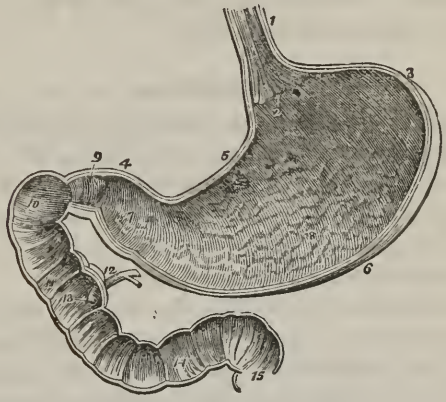


Fig. 22. A vertical and longitudinal section of the stomach and duodenum. 1 Œsophagus; 2 cardiac orifice of the stomach; 3 greater end of the stomach; 4 Lesser or pyloric end; 5 lesser curvature; 6 greater curvature; 7 antrum pylori; 8 folds or rugæ of the mucous membrane; 9 pyloris; 10 oblique portion of the duodenum; 11 descending portion; 12 pancreatic duct, and ductus communis choledochus; 13 opening of these ducts; 14 transverse portion of the duodenum; 15 commencement of the jejunum; the valvulæ conniventes are shown in the duodenum and jejunum.

The *cellular coat* connects the muscular with the mucous, and serves for the transmission of blood-vessels and nerves to the mucous coat.

The *mucous coat*, also called *villous*, is the most internal, and is continuous with that of the œsophagus; it is of a light pink color, and presents a velvety appearance, hence the name villous has been applied to it. When the stomach is not distended, this coat is thrown into longitudinal folds or *rugæ*, which are

most numerous along the greater curvature, and near the pyloric orifice. A circular fold of mucous membrane at the pyloric orifice, which lessens its size, is called the *pyloric valve*. The office of this coat is to secrete the gastric juice.

The Intestines.

The whole length of the intestinal canal is from thirty to thirty-five feet. It extends from the pyloris to the anus, and is divided into large and small intestine.

Small Intestine.

The small intestine commences at the pyloris, and terminates by a lateral opening into the large intestine in the right iliac region. It comprises four-fifths of the length of the whole canal, and is from twenty to twenty-four feet long. It is cylindrical in shape, and about an inch in diameter, although there is a gradual decrease in diameter from above downwards.

Like the stomach, the small intestine has four distinct coats.

The *peritoneal coat* is the most external; and after completely investing the intestines, it is continued in two laminæ to be attached to the lumbar vertebræ, thereby constituting the mesentery.

The *muscular coat* is next to the peritoneal, and is thin and pale; the superficial fibres are longitudinal, though indistinct; the internal are circular.

The *cellular coat*, like that of the stomach, connects the peritoneal with the mucous, and serve to transport blood-vessels, nerves and lacteals. When dried it appears like cotton, as also does the corresponding coat in the other portions of the alimentary canal.

The *mucous coat* is internal, and much longer than the others, which allows it be thrown into numerous folds or duplicatures; these folds generally pass quite around the intestine, and overlap each other, like the shingles of a house. They are called *valvulæ conniventes*, and their office is to retard the progress downwards of alimentary matter, and to increase the absorbing

and exhaling surface. The surface of the mucous membrane is covered with numerous papillary projections, called villi; and each villius is composed of an artery, vein and lymphatic. The lymphatics do not open directly upon the surface of the mucous membrane, but the chyle is conveyed out of the intestine by the intervention of cells.

The cellular coat is studded with mucous glands, whose ducts open upon the surface of the mucous coat. They are mostly microscopical. Some of them, which are visible to the naked eye, and called the *glands of Brunner*, are found scattered throughout the intestine, although existing in most abundance in the duodenum. Others still larger, called *Peyer's glands*, are found chiefly in the lower part of the small intestine. They consist of a cluster of smaller glands, and are consequently often called aggregated. Those of *Brunner* are also sometimes called *solitary*.

The small intestine is divided by anatomists, though without much reason, as it is a continuous tube, into the duodenum, jejunum, and ilium.

The *duodenum*, so named from its being about twelve fingers' breath, or twelve inches long, is that portion next the stomach. Its direction is curved, forming a segment of a circle, the concavity of which looks towards the left side. The mucous coat of the duodenum is tinged with bile, and contains a great number of valvulæ conniventes, and the glands of Brunner.

The *ductus communis choledochus*, from the liver and pancreas, empties into the duodenum, about four inches from the pylorus.

The *jejunum* and *ilium* form the remaining three-fifths of the small intestine, the former being two, and the latter one-fifth of the length; the only differences in their appearance are that the jejunum contains a large number of valvulæ conniventes, and is rather larger in its diameter than the ilium.

The small intestine, as stated, is attached to the posterior part of the abdomen by a process of peritoneum, called the *mesentery*. This attachment, called the root of the mesentery, is about six

inches in length, and extends from the left side of the second lumbar vertebræ to the right iliac fossa.

Large Intestine.

The large intestine receives the effete matters from the small, and comprises about one-fifth of the length of the whole intestinal canal. It commences at the inferior end of the small intestine, and describing a circle, which surrounds two-thirds of the abdomen, terminates at the anus. Its diameter is much greater than that of the small intestine, and it also presents a sacculated appearance.

It is composed, like the small intestine, of four coats.

The *peritoneal coat* is continuous with the mesocolon and affords a complete investment, except at the lower part of the rectum, and the descending portions of the colon, where the latter comes in contact with the abdomen.

The *muscular coat* consists of longitudinal and circular fibres; the former are collected into three fasciculi, or bands, which extend to the rectum.

The *cellular coat* unites the muscular and mucous coats, and contains the blood-vessels and nerves.

The *mucous coat* is smooth, having neither villi nor valvulæ conniventes. It contains numerous follicles, called the follicles of *Lieberkühn*. It also contains some solitary glands.

The large intestine is divided into three parts, the cœcum, the colon, and the rectum.

The *cœcum* is the commencement of the large intestine, and is about two inches in length. It is confined by the mesocolon in the right iliac fossa. It is often called the *caput coli*, or head of the colon. Attached to its rounded extremity is a worm-like process of intestine, from three to four inches long, called the *appendix vermiformis*. This appendix is usually filled with flatus.

At the side of the cœcum is an elliptical opening, called the *ilio-colic valve*, by which the small intestine empties into the large. When the cœcum is distended, this valve becomes closed, and prevents the return of fœcal matter into the small intestine.

The *colon* comprises the principal part of the large intestine; it commences at the ilio-colic valve, and ascends on the right side of the abdomen to the margin of the false ribs, it then passes transversly across, beneath the stomach, to the left side, whence it descends to the left iliac fossa, and terminates in the *sigmoid flexure.*

The *rectum* commences at the left sacro-iliac symphisis, at the termination of the long, loose convolution of the colon, called the sigmoid flexure, and passes down in front of the sacrum to the anus.

Its *muscular coat* is much thicker and redder than that of any other portion of the intestines; the external fibres are longitudinal, and the internal circular. At the lower extremity of the rectum, the circular fibres are multiplied so much as to form a complete internal sphincter muscle.

The *mucous coat* is thick, red, and spongy, and five or six inches above the anus on each side, is thrown into a semi-circular fold, somewhat resembling the valvulæ conniventes, which in some degree prevent the involuntary discharge of fæces. Just above the anus are a number of small pouches, having their orifices pointing downwards. The rectum is larger in the middle than at the ends.

The Liver.

The liver occupies the whole of the right hypochondriac, and a portion of the epigastric and left hypochondriac regions. It is the largest glandular organ in the body, and secretes the bile. In shape it is oblong and oval; its weight is from four to five pounds, and it measures about ten inches in length, six or seven in width, and four or five in thickness. Its long diameter is across the body. Its color is a reddish brown, with occasional blue or black spots on its under surface and about its edges.

The upper surface is regularly convex, fitting closely to the concave under surface of the diaphragm; and the lower concave; the right end is also much thicker than the left. A broad ligament, called *suspensory,* formed from its peritoneal covering,

holds the liver in contact with the diaphragm. The anterior part of this ligament is the ligamentum teres, and the posterior the coronary ligament. In the anterior edge of the liver is a notch, and in the posterior edge a deep depression for the spinal column. On its under surface, extending from the notch in front to the depression behind, is the *umbilical fissure*, or sulcus, so called from having accommodated the umbilical vein in the fœtal state; at right angles with this is the *transverse fissure*, which contains the hepatic artery and duct, surrounded by cellular membrane, and called the *capsule of Glisson*.

Fig. 23.

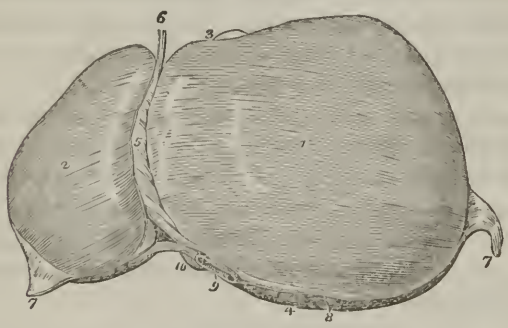


Fig. 23. Representation of the upper surface of the liver. 1 Right lobe; 2 left lobe; 3 anterior, free border, and fundus of gall bladder; 4 posterior border; 5 broad ligament; 6 round ligament; 7, 7 lateral ligament; 8 origin of the coronary ligament; 9 inferior vena cava; 10 point of the lobulus Spigelii.

The liver is divided into two lobes, a right and left lobe, the division being marked above by the suspensory ligament, and below by the umbilical fissure. The right lobe is much the larger, and has several elevations on its under surface; the principal of which are the *lobulus Spigelii*, *lobulus quadratus*, and the *gall bladder*.

Four sets of vessels ramify through the substance of the liver, making it extremely vascular.

The *portal vein* collects the blood from the stomach, intestines,

pancreas, and spleen, and after reaching the transverse fissure, divides into two branches, called the right and left sinuses, one of which is distributed to each lobe of the liver.

The *hepatic artery*, also, conveys blood to the liver; it is a branch of the cœliac, and at the transverse fissure divided into three or more branches previous to penetrating the substance of the liver.

The *hepatic veins* arise by capillaries in the acini of the liver, and after collecting into three large trunks, empty into the ascending vena cava at the posterior margin of the liver. These veins are destitute of valves, and have very thin parietes.

The *hepatic duct* also commences by capillaries in the liver; when it reaches the transverse fissure it is about the size of a writing quill. It joins the duct of the gall bladder at an acute angle; and the union of the two forms the ductus communis choledochus, which empties into the duodenum three or four inches from the stomach.

Fig. 24.

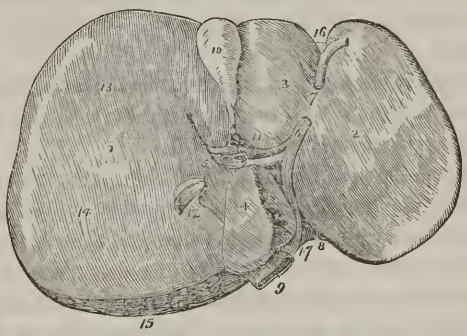


Fig. 24. Representation of the under surface of the liver. 1 Right lobe; 2 left lobe; 3 lobulus quadratus; 4 lobulus Spigelii; 5 lobulus caudatus; 6 longitudinal fissure; 7 pons hepaticus; 8 fissure for the ductus venosus; 9 inferior vena cava; 10 gall bladder; 11 transverse fissure; 12 vena cava; 13 depression for the curve of the colon; 14 double depression made by the right kidney and its supra-renal capsule; 15 rough surface on the posterior border of the liver; 16 notch separating the lobes anteriorly; 17 depression on the posterior border for the spinal column.

The minute *structure* of the liver is made up of a numerous collection of irregular lobules, or *acini*. This arrangement is best seen on tearing the organ. Each lobule is said to be about the size of a millet seed, and to represent of itself a perfect gland, being formed by the termination of the blood-vessels, and by the origin of a branch of the hepatic duct, called the porus biliaris. These lobules are held together by means of a cellular tissue, which is called the parenchyma.

The Gall Bladder.

The gall bladder is the reservoir for the bile; it is attached to the under surface of the right lobe of the liver to the right of the umbilical fissure, and has its long diameter inclining slightly to the right side. It is a pyriform sac, and about three inches in length. Its rounded extremity, called the *fundus*, projects somewhat beyond the anterior border of the liver. Its posterior extremity, or *neck*, is narrow and twisted to retard the passage of a fluid through it.

It has three coats, a peritoneal, a cellular, and a mucous one. The peritoneal coat is but a partial one, covering its inferior surface only.

The middle is of strong cellular membrane; and the internal mucous coat is thrown into irregular delicate folds, and tinged of a deep green or yellow color by the bile.

The *duct* of the gall bladder, called the *cystic*, is shorter and smaller than the hepatic, which it joins at an acute angle; the union of the two forming the ductus communis choledochus, which is from two to three inches long, and about the size of a goose quill. As mentioned it empties into the duodenum, in an oblique manner, after passing through the right extremity of the pancreas. Its orifice is very small, and marked by a tubercle on the inner side of the duodenum.

The *bile* is of a deep yellow, sometimes green color, and bitter taste. When recently secreted, it is thin and fluid; but after remaining for some time in the gall bladder it becomes as thick as molasses, and increases, also, in the intensity of its color and

in bitterness. This is owing to the absorption of its watery particles by its mucous coat.

The chief use of the bile is to aid digestion by dissolving the fatty matters, and rendering them capable of being taken up by the lacteals.

The Spleen.

The spleen is situated in the posterior part of the left hypochondriac region. Immediately above it is the diaphragm, below it the colon, and to the right the large end of the stomach and the pancreas. It is of a semi-oval figure, and of a deep blue or brown color. Its external surface is convex; its internal slightly concave, and has an imperfect fissure in its centre, where the blood-vessels enter. Sometimes, also, its margins are notched. The usual size of the spleen is four or five inches in length, by two or three in breadth. In some individuals several spleens are found, the additional ones in such cases being quite small. It is kept in its place by ligaments, formed of the peritoneum, which pass between it and the diaphragm, stomach and colon.

In *structure* it presents a dark, brown pulp, which is held together by cells formed of the internal coat. It has two coats, an external peritoneal one, and an internal thin, gray and elastic one.

The *splenic* artery, which is the largest branch of the cœliac, furnishes it with blood; its vein empties into the vena portarum.

The spleen has no secretion, and its use is not well ascertained.

The Pancreas.

The pancreas secretes saliva, and is the largest salivary gland in the body. It is placed horizontally across the spine, in front of the last dorsal and first lumbar vertebræ, and behind the stomach. Consequently it is in the lower back part of the epigastric region. Its length is from six to seven inches, and its width about two. It is flattened before and behind. The anterior face looks obliquely upwards, and the posterior face obliquely downwards. The right extremity is enlarged into a head or

tuber, sometimes called the lesser pancreas, and is in contact with the curvature of the duodenum; the left extremity is connected with the spleen.

The color of the pancreas, like that of the other salivary glands, is of a light gray or pink hue; and its structure is lobulated, the lobules being held together by intermediate cellular tissue.

It has no peritoneal coat, but is included between two lamina of the mesocolon. Its duct, called sometimes the duct of *Wirsungius*, empties into the duodenum near the orifice of the ductus communis choledochus, and sometimes into the latter. The arteries of the pancreas are branches of the splenic, and its veins also empty into the splenic.

Physiology of Digestion.

Before the food is fitted for purposes of nutrition, it has to undergo several changes in the digestive organs.

The first stage in the process of digestion is called *prehension*, or the taking of food into the mouth. This is chiefly accomplished by the hand, some assistance being rendered by the front teeth, lips, cheeks and tongue.

The second stage is *mastication* (chewing), by which the food is rendered sufficiently fine to be taken into the stomach, and acted on by its juices. The food is kept between the teeth by the lips and cheeks externally, and by the tongue internally, and the closure of the soft palate upon the tongue prevents it from passing into the œsophagus. The motion of the lower teeth upon the upper reduce it to the requisite fineness.

While the food is being masticated, it is mixed with the saliva and juices of the mouth, which soften it and aid in its reduction. This is called *insalivation*.

The third stage is *deglutition* or swallowing, which, when the food has been sufficiently comminuted and moistened in the mouth, is effected by a simultaneous action of the muscles of the tongue, cheeks, floor of the mouth, soft palate and pharynx. The elevation of the soft palate prevents the food from passing into the posterior opening of the nostrils (nares); and it is pre-

vented from passing from the pharynx into the trachea by the closure of the glottis (opening of the trachea) by the epiglottis. After entering the œsophagus, the alternate relaxing and contraction of the circular bands of muscular fibres gradually force it downwards into the stomach. In the effort of vomiting, the action of the œsophagus is reversed—the contraction of its muscular fibres commencing at its lower extremity. The spasmodic cough which sometimes takes place while eating or drinking, is owing to some particles of the aliment entering the larynx or trachea, which cannot occur unless the glottis is opened by the inhalation of air. An attempt to speak when the mouth contains food is generally the cause.

The fourth stage in the process of digestion is *chymification*, or the conversion of the food into a homogeneous pulpy mass, generally of the consistence of cream, called *chyme*. This change is effected in the stomach; as soon as the food enters this organ, it is thoroughly mixed with the gastric juice, by the alternate contraction and relaxation of the fibres of the muscular coat, which produce a great variety of motion. The contraction of the muscular coat as well as the secretion of the gastric juice from the follicles of the mucous coat, is occasioned by the stimulus of the food. No gastric juice is contained in the organ when in a state of rest, but its secretion is always excited by the presence of a foreign body. While the process is going on, the food is prevented from escaping from the stomach by the closure of its orifices.

The gastric juice is colorless, slightly viscid, and has an acid reaction. By analysis it has been found to contain free muriatic and acetic acids, and phosphates and muriates of potassa, soda, magnesia and lime. Although the presence of dilute acids in the gastric fluid is essential to its action, the active agent is an organic compound, called *pepsin*.

This agent undergoes no change itself, but induces changes in other substances, disposing them to dissolve in the acids of the stomach, and form with them definite chemical compounds.

The degree of solubility of different substances in the juices

of the stomach varies. As a general rule, animal food is more soluble than vegetable—though this is not invariably the case. Fatty substances undergo but little change in the stomach; they require admixture with the bile, whereby a saponaceous compound is formed, to fit them for absorption by the chyliferous vessels.

The time required by the stomach to convert the food into chyme, varies from three to five hours according to the nature of the food.

The fifth stage is *chylification*. After the food is reduced to chyme in the stomach, it passes through the pyloric orifice into the duodenum, where it is mixed with the bile and pancreatic juice, and by their action converted into chyle and residual matters. The chyle is a whitish or whey-like fluid, with a creamy pellicle. As the contents of the intestine are gradually carried along the canal by an action, called *peristaltic*—induced by the alternate contraction and relaxation of the muscular coat—the chyle is absorbed by the lacteals through the villi of the mucous coat, and the residual fœcal matters pass into the large intestine, where it accumulates until finally expelled from the system. After leaving the intestinal canal, the chyle is carried by the lacteals through the mesenteric glands or ganglia, and emptied into the receptaculum chyli at the commencement of the thoracic duct, along which it passes to enter the circulation at the junction of the internal jugular and subclavian veins.

The Kidneys.

The kidneys are two glands, for the secretion of urine, one of which is situated on each side of the spine, in the back part of the lumbar region. They extend from the last dorsal to the third lumbar vertebræ; the right one being somewhat lower than the left, to accommodate the right lobe of the liver. In shape the kidney is oval, resembling the kidney bean; its position is upright, with the excavation, called *hilum*, presenting towards the spine. It is a hard, solid body of a reddish brown color. The length is about four inches, and the breadth two.

The kidneys are placed without the cavity of the peritoneum, and surrounded with an abundance of fat, and cellular tissue. Their proper covering is a dense fibrous capsule which envelops them completely, and penetrates into the fissures.

The kidney consists of two different *structures*, which may be readily seen by cutting it open longitudinally. One, the external, is called *cortical*, the other, the internal, *medullary*. The *cortical substance* is about one-fourth of an inch thick, and forms the whole circumference of the kidney. It consists of a number of tortuous tubes of *Ferrein*, which secrete the urine, between which are numerous minute blood-vessels.

The *medullary* substance is of a darker color than the cortical, and consists of from twelve to eighteen cones (named after *Malpighi*), which are arranged in three rows with their apices converging towards the *hilum* or fissure. These apices are called papillæ renales, in consequence of their projecting like so many small nipples. Each cone forms a sort of distinct gland, and can be subdivided into numerous tubes, called the tubes of *Bellini*, into which the tortuous tubes of *Ferrein*, from the cortical substance, empty. As the urine oozes from the orifices of the papillæ, it is received into a membranous cup, the *infundibulum*, which surrounds each papilla. From these infundibulæ, four or five of which are united into a common trunk for that purpose, and called a *calyx*, the urine passes into a common receptacle, called the *pelvis*, which is formed by the junction of about three calyces.

The *pelvis* is in the centre of the kidney, and of a conoidal shape; from it the excretory duct of the kidney, called the ureter, conveys the urine to the bladder. The ureter is cylindrical, and about the size of a writing quill; it has two coats, an internal mucous one, and an external fibrous one. They are thin, white, and extensible.

The *ureter* descends between the peritoneum and psoas magnus muscle, and enters the inferior fundus of the bladder obliquely, by a very small orifice.

Supra-Renal Capsules.

There are two small bodies, placed one upon the upper end of each kidney. They are of a yellowish brown color, and triangular pyramidal shape, the base being concave to rest upon the kidney. They have no excreting duct, nor is their use known. It is supposed, as they are larger in the fœtus than the adult, that their use is confined to fœtal life.

The Bladder.

The bladder receives and serves as a reservoir for the urine. It is placed in the pelvis immediately behind the pubes. When distended, its shape is generally oval, the large end being downwards; in women and young children it is nearly spherical; it is also, mostly, more capacious in woman than in man. The dimensions of the bladder varies; when healthy it will generally hold near a pint. It is bounded in front by the pubes, above by the small intestine, behind by the rectum, and below by the prostate gland and seminal vesicles. A conical ligament, called the *urachus*, extends from the superior extremity of the bladder to the umbilicus; on each side of the urachus, in the folds of the peritoneum, are the round ligaments, which were the umbilical arteries in fœtal life.

Besides these ligaments, the pelvic aponeurosis also assists to retain the bladder in its place. Its upper extremity is called the *superior fundus*, its lower extremity the *inferior fundus*, and between the two is the body. The neck is at the junction of the bladder with the urethra.

The walls of the bladder consists of four coats, viz. a peritoneal, a muscular, a cellular, and a mucous one.

The peritoneal coat covers the superior fundus, and the posterior part of the body. The muscular coat consists of pale fibres which pass in various directions. It is somewhat thicker than that of the intestines; and its contractions expel the urine.

The cellular coat connects the muscular and mucous coats, and is dense, strong, capable of much distention, and impervious to water. Through it the vessels and nerves are transmitted.

The mucous coat, also called the villous, is much more smooth than that of the intestines; it is of a light pink color, and contains a great number of small mucous follicles. An angular space within the cavity of the bladder, included between the orifices of the ureters and the orifice of the urethra, is called the *vesical triangle*. A projection in the anterior angle, caused by the third lobe of the prostate, is called *uvula vesicæ*.

The *sphincter vesicæ* consists of a semi-circular and transverse band of muscular fibres surrounding the neck of the bladder. Its office is to keep the orifice closed.

The *urethra* is the membranous canal which conducts the urine from the bladder, in the male it also conducts the semen; it consists of an internal mucous coat, continuous with that of the bladder, and an external muscular one. Its course is curved. In the male, the portion which extends from the neck of the bladder through the prostate gland, is called the *prostatic* portion, and is about an inch in length; in it are the uvula vesica, and the caput gallinaginis or verumontanum—the latter is a triangular elevation of mucous membrane, at the base of which are the orifices of the ejaculatory ducts. The next portion is about three-fourths of an inch in length, quite narrow, and is the membranous portion; the remaining portion, which is the longest, passes through the penis; when it enters this organ, there is an enlargement, called bulbous. The *urethra* of the female is much shorter than that of the male; it passes from the neck of the bladder downwards and forwards under the symphysis pubis, and has its sexternal orifice at the superior, anterior angle of the vagina. The orifice is marked by a slight elevation.

The Prostate Gland.

This is a hard body, about the size and shape of a horse chestnut, fixed to the neck of the bladder. It rests upon the rectum behind, and in front is bounded by the triangular ligament. It consists of three lobes, through the middle one of which the urethra passes. It secretes a thick, white mucous, which is discharged into the urethra.

Organs of Respiration.

These are the larynx, the trachea, and the lungs.

Larynx.—The larynx is a cartilaginous tube, forming the commencement of the windpipe. It is placed in the upper and anterior part of the neck immediately below the os hyoides. The œsophagus is situated immediately behind it, separating it from the vertebræ of the neck; and on each side are placed the primitive carotid arteries and the internal jugular veins. It gives passage to the air to and from the lungs, and also regulates the voice; its superior portion is prismatic, and its inferior circular. In males it is larger, proportionably, than in females.

The five following cartilages compose it, viz. one thyroid, one cricoid, two arytenoid, and one epiglottis.

The *thyroid* is the largest of the five, and is placed at the upper and anterior part of the neck, about one inch below the os hyoides. It consists of two symmetrical, quadrilateral plates which unite in an acute angle at the median line, and constitute the prominence in the upper part of the throat known as the *pomum Adami* (Adam's apple), which is much larger in men than women. In the upper part of this prominence is a deep notch. On either side the superior margin is curved like the letter S, and to it is attached the middle thyreo-hyoid ligament; the inferior margin is also curved, but in a less degree, and to it is attached the middle crico-thyroid ligament. The posterior margin is elongated above and below into processes or cornua, of which the superior are the longer, and called cornua magna, and are attached to the lateral thyreo-hyoid ligament; and the inferior, which are short and curved, are called the cornua minor, and articulate with the lateral crico-thyroid ligaments.

The *cricoid* cartilage is situated below the thyroid, and forms the base of the larynx; it is an oval ring, with the lower margin nearly straight and horizontal, and connected to the first ring of the trachea; the superior margin is oblique on account of the breadth being three times as great behind as in front; on each

side of the superior part of the posterior margin is a small convexity for articulating with the arytenoid cartilages. Externally the posterior surface is flattened, and from it arises the crico-arytenoid muscle.

The *arytenoid* cartilages are placed at the upper and posterior portion of the larynx, and in shape resemble triangular pyramids curved backwards. Their bases articulate with the cricoid cartilage. When joined together, the two cartilages resemble the mouth of a pitcher, from which they received their name; to the anterior surface, which is uneven, the superior and inferior thyreo-arytenoid ligaments.

The *epiglottis* cartilage is situated on the posterior face of the base of the hyoid bone, and is partially enclosed by the two sides of the thyroid cartilage. Its form is that of an oval disk; the upper edge is thin and rounded; the lower part is also thin and elongated, and attached to the thyroid cartilage. Its attitude is vertical, immediately behind the base of the tongue, and projecting somewhat above it; the anterior surface is slightly concave, and the posterior convex.

Besides these cartilages there is sometimes a small one, called corniculum laryngis, attached to the apices of each of the arytenoid cartilages.

Numerous ligaments hold these cartilages together. Four of these within the larynx, are the *thyreo-arytenoid ligaments;* the two inferior are commonly called the vocal cords, and extend one on each side from the angle of the thyroid to the base of the arytenoid cartilages; the space included between them is the *rima glottidis.* The two *superior* ligaments, also one on each side, are placed three or four lines above the inferior, and extend from the angle of thyroid to the middle of the arytenoid cartilages. All of these ligaments are small, round, fibrous threads, covered by a reflection of the lining membrane of the larynx. The action of the small muscles of the larynx render them more or less tense.

The following pairs of muscles belong to the larynx, viz. the *thyreo-hyoid,* the *cryco-thyroid,* the *posterior crico-arytenoid,*

the *lateral crico-arytenoid*, the *thyreo-arytenoid*, the *oblique arytenoid*, the *transverse arytenoid*, the *thyreo-epiglottideus*, and the *aryteno-epiglottideus*.

Their names sufficiently indicate their attachement; they serve to move the various cartilages, and modulate the voice.

The larynx is lined internally by a mucous membrane continuous above with that of the pharynx, and below with that of the trachea.

Fig. 25.

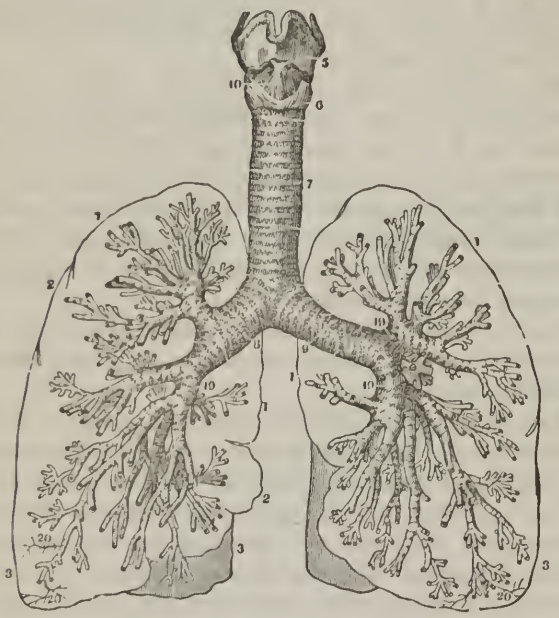


Fig. 25. A view of the larynx, trachea, and bronchia, with an outline of the lungs. 1, 2, 3 Outline of the lungs; 5 thyroid cartilage; 6 cricoid cartilage; 7 trachea; 8 right bronchus; 9 left bronchus; 10 muscles connecting the thyroid and cricoid cartilages; 19, 19 the subdivisions of the right and left bronchial tubes; 20, 20 capillary vessels.

The Trachea.

The trachea is a cylindrical canal, four or five inches in length by about three-fourths of an inch in diameter, extending from the larynx as low as the third dorsal vertebræ, and terminating in two ramifications called bronchia. It is composed of from sixteen to twenty distinct rings of cartilage united by an elastic ligamentous tissue. These rings are deficient in the posterior third of their circumference, which is completed by a muscular structure, whose fibres are transverse, and the contractions of which, diminish the diameter of the larynx, and thereby facilitate expectoration. Each ring is about a-fourth of an inch broad, and half a line thick. The trachea is lined by a mucous membrane continuous with that of the larynx.

The structure and arrangement of the bronchia is the same as that of the trachea. The right *bronchus* is larger and of a larger diameter than the left. At the orifice of each branch there is a semi-lunar cartilage, which forms somewhat more than half of its circumference, and the office of which is to keep the orifice open. The bronchia, after ramifying into numerous subdivisions, terminate in the lobules of the lungs. The structure of the smaller ramifications is somewhat modified; the cartilages, instead of being formed of one piece, are composed of several pieces, and are placed farther apart; finally, they disappear entirely, and the bronchia are membranous only.

The Thyroid Gland.

This gland is situated in front of the first and second rings of the trachea, and at the sides of the larynx. It consists of two lobes, one on each side, united by a thin, narrow portion stretched across in front of the upper part of the larynx, called the isthmus. It is of a dark brown color, and granular structure. It is also covered by a capsule which gives it a polish. Its use is not known.

In some districts of country it becomes very much enlarged, constituting the disease known as bronchocele or goitre.

The Lungs.

The lungs are the essential organs of respiration, and are situated one on each side of the chest, occupying the principal part of its cavity. They are conical in shape, and separated from each other by the heart and by a membranous septum, called the mediastinum; the diaphragm separates them from the abdomen. On the external surface they are concave, corresponding with the walls of the chest; internally they are concave to receive the convexity of the heart. The superior extremity is a tapering cone, terminating above the level of the first rib; the inferior extremity is broad and concave, and rests upon the diaphragm. The color of the lungs is a light pink, with specks or patches of black.

The right lung is somewhat shorter than the left, though more voluminous; and is divided into three lobes, while the left has but two.

Each lung is supported in its place by its root, which is composed of the pulmonary artery, pulmonary veins, bronchial tubes and vessels, and the pulmonary plexus of nerves.

In *structure* the lungs are divided into numerous lobules, and these again into minute air-cells, all of which are held together by cellular tissue, through which the blood-vessels, nerves and lymphatics ramify. The shape of the air-cells is polyhedral, and a certain number of them communicate with each other, by lateral openings, and with a single branch of the bronchial tube. They are lined by mucous membranes. The intermediate cellular substance is called parenchyma.

The pulmonary artery, which conveys the dark, venous blood to the lungs, terminates in capillaries which ramify on the walls of the air-cells; from these walls arise the pulmonary veins, by which the arterial blood, purified in its passage through the capilaries, is returned to the heart.

The bronchial arteries are the nutritious arteries of the lungs; they arise from the thoracic aorta.

The lymphatics, which are numerous, arising from the surface

and the substance of the lungs, terminate in the bronchial glands, which are placed at the roots of the lungs, and at the bifurcation of the bronchia.

The nerves are branches of the sympathetic and eighth pair.

Fig. 26.

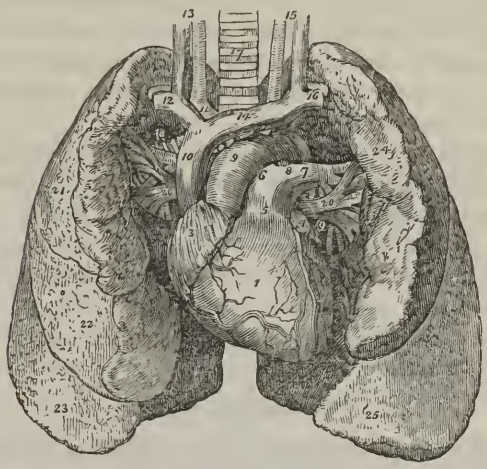


Fig. 26. Front view of the heart and lungs. 1 Right ventricle of the heart; 2 left ventricle; 3 right auricle; 4 left auricle; 5 pulmonary artery; 6 right pulmonary artery; 7 left pulmonary artery; 8 remains of the ductus arteriosus of the fœtus; 9 arch of the aorta; 10 superior vena cava; 11 arteria innominata; 12 right subclavian vein; 13 right common carotid artery and vein; 14 left vena innominata; 15 left carotid artery and vein; 16 left subclavian vein and artery; 17 trachea; 18 right bronchus; 19 left bronchus; 20, 20 pulmonary vein; 7, 19, 20 form the root of the left lung; and 18, 20 the root of the right lung; 21 superior lobe of the right lung; 22 its middle lobe; 23 its inferior lobe; 24 superior lobe of the left lung; 25 its inferior lobe.

The Pleuræ.

Each lung is invested by a serous membrane which maintains its structure and gives to it its shining appearance. After enclosing the lung as far as the root, it is reflected upon the parietes of the chest. The portion that covers the lungs is called

the *pleura pulmonalis*, and that in contact with the chest the *pleura costalis*. The diaphragm and the root of the lung is also covered by it.

The Mediastinum.

The space included between the pleura of the two lungs is called the *mediastinum*. It is in the middle line of the thorax, and is divided into the anterior, middle and posterior.

The anterior mediastinum is the triangular space between the sternum and heart; it contains the remains of the thymus gland, and some loose cellular tissue.

The middle mediastinum contains the heart, the ascending aorta, the superior vena cava, the bifurcation of the trachea, the pulmonary arteries and veins, and the phrenic nerves.

The posterior mediastinum extends from the heart to the spinal column, and contains the descending aorta, the superior intercostal, and greater and lesser azygos veins, the thoracic duct, the œsophagus, the great splanchnic nerves, and the pneumogastric nerves.

The Thymus Gland.

The thymus gland is placed in the anterior mediastinum; it is of a triangular shape and pink color. Its structure is lobulated. Its use is not known; up to the second year of age it grows, after which it gradually diminishes and almost entirely disappears. In all probability it is of importance in fœtal life.

Physiology of Respiration.

The function of respiration consists in the conversion of venous into arterial blood. This change, by which carbonic acid is given off from, and oxygen taken into the system, takes place in the lungs. In the periphery of the body the circulating fluid becomes dark colored, and is taken up by the radicles of the veins, and after being mixed with the lymph and chyle, is carried to the lungs, where it is brought into contact with the atmospheric air, which restores its red color, and fits it for purposes of nutrition.

The manner in which this is accomplished is the following: the walls or sides of the air cells are very thin and transparent, and the capillaries are so placed between two adjacent cells, as to come in contact with the air from both. The carbonic acid of the venous blood then passes out through the walls of the air cells by *exosmose* or exudation, to unite with the nitrogen of the air, for which it has a strong affinity, and be exhaled from the lungs; and the oxygen of the air contained in the air cells passes through their parietes by *endosmose*, or imbibition, to unite with the blood, giving to it its bright red arterial color, thus vitalizing it, or fitting it for the various purposes of life.

The carbonic acid given off in respiration is chiefly furnished by the continual decay of the tissues. The carbon of the food, however, is also directly converted into carbonic acid to a considerable degree,—varying in quantity according to the amount of animal heat required.

Inspiration, or the action by which air is taken into the lungs, and expiration, or the action by which the air received in inspiration is expelled from the lungs, are performed by the expansion and contraction of the chest.

In the first inspiration, the diaphragm is the principal agent in the dilatation of the chest; when in a state of rest, this muscle is much arched, but by contracting it becomes more plane, and by flattening its arch increases the cavity of the thorax, while at the same time, by forcing down the abdominal viscera, it causes the protrusion of the abdomen, witnessed in inspiration. The intercostal and other of the muscles of the chest produce the lateral dilatation, which is however slight in ordinary natural inspiration, but is considerable when the inspirations are deep and forced. In a natural, quiet inspiration, the expansion of the chest is almost wholly accomplished by the diaphragm. This is also the case in old persons, the ossification of the cartilages of the ribs preventing lateral expansion.

In general there are from sixteen to eighteen inspirations per minute, though the number varies greatly under different cir-

cumstances. The average proportion, numerically, of the pulsations of the heart to the respiratory movements is about four and a half to one. At about every fifth inspiration the movements of the thorax are considerably increased.

In the second, or *expiration*, the parts concerned in inspiration return again to their natural state; the elasticity of the cartilages of the ribs, the rings of the bronchia, and of the air cells themselves, all aid in accomplishing this, as does also the contraction of the abdominal, and some of the thoracic muscles.

After each expiration, a short interval of repose succeeds; the length of this interval has been estimated as follows. By representing the whole period of time occupied in one respiratory act, from the beginning of one inspiration to the beginning of the next, by ten, the inspiration may by estimated at five, the expiration at four, and the interval of repose at one.

The amount of air inhaled at each inspiration is estimated to be about twenty cubic inches, which, allowing sixteen inspirations per minute, would give 19,200 cubic inches in one hour, passing through the lungs of an individual, or 460,800 cubic inches in twenty-four hours.

A certain portion of air, called *residuary*, always remains in the lungs, and upon it their lightness depends. It has been calculated that after an ordinary expiration more than a hundred cubic inches remain, and after the strongest expiration more than thirty. After the lungs have been once inflated by a full inspiration, no power whatever can remove the air from them so as to cause them to sink in water. The residuary air will not support life a longer time than three or four minutes.

"The movements of respiration are partly voluntary, and partly involuntary. Partly voluntary, in order that they may be inservient to the production of vocal sounds, and to the actions of speaking, singing, &c. Partly involuntary, lest in sleep or in moments of forgetfulness, the movements of respiration should be suspended, and fatal results ensue."

The nerves which govern the respiratory movements are derived from the *medulla oblongata* at the base of the brain.

Circulatory System.

The organs concerned in the circulation, are the heart, the arteries, the veins, and the lymphatics.

The Heart.

The heart, the centre of the circulation, is a hollow muscular organ, situated in the thorax between the sternum and the spine; being bounded at the sides by the lungs, and resting on the centre of the diaphragm below. In shape it is conoidal, having the apex inclined to the left side, and in contact with the walls of the thorax about the junction of the fifth rib with its cartilage. The side which rests upon the diaphragm is somewhat flattened. The length of the heart is about five inches and a half, and its diameter at the base three inches and a half. Its ordinary weight is about six ounces. It has four cavities, two of which are called *auricles*, and two *ventricles*. The heart has two functions, viz. to receive the blood and throw it into the lungs, and to receive it again after it has been *oxygenated* in the lungs, and distribute it throughout the body. The auricles are the receptacles of the blood, and the ventricles propel it through the system.

The auricles form the base, and the ventricles the body of the organ; the anterior extremity of the left ventricle, which extends somewhat beyond the right, constitutes its apex.

A membrane, called the *pericardium*, surrounds the heart, and also invests the roots of the large vessels connected with it. This membrane consists of two layers, an internal and an external one; and is only attached to the base of the heart, the remainder of the organ being only loosely enveloped by it.

The *right auricle* is an oblong cuboidal cavity, having superiorly an elongated process, which bears some resemblance to the ear of an animal, from which the term *auricle* has probably originated; anteriorly it has a convexity or pouch, called its *sinus*. Posteriorly, at its superior angle, the descending vena cava enters, and at its inferior angle the ascending vena cava. Its parietes are thin, and composed of muscular fibres arranged

in parallel lines, resembling the teeth of a comb, whence their name *musculi pectinati.* Between the orifices of the two vena cava, an elevation exists called the *tuberculum Loweri.* A depression on the partition between the two auricles is called the *fossa ovalis;* in fœtal life an opening existed at this place, called the foramen ovale. Between the right auricle and ventricle is a round hole about an inch in diameter, called the *ostium venosum,* for the passage of the blood.

The *right ventricle* receives the blood from the right auricle. It is a somewhat triangular cavity, having its base downwards, with thick parietes, and is also larger than any of the other cavities of the heart. It is placed anterior to the left ventricle, from which it is separated by a thick septum. The internal surface of the cavity is composed of large fleshy fibres, called *columnæ carnæ,* from a number of which several tendinous chords (*chordæ tendineæ*) proceed to be inserted into the loose edge of the tricuspid valve. This valve is situated between the auricle and ventricle, opening into the latter, and is formed of a doubling of the lining membrane of the ventricle. It is circular, and attached around the ostium venosum; at its loose margin are three points or processes, from which it derives its name *tricuspid.* When the heart contracts, this valve closes the ostium venosum, and prevents the blood from returning into the auricle, and hence it passes into the pulmonary artery. The orifice of the pulmonary artery is circular, and about an inch in diameter; it is furnished with three valves, called from their shape *semilunar;* they are formed from the internal coat of the artery, and open outwards; in the centre of their loose edges is a small cartilage, called the *corpus aurantii,* the office of which is to perfect the closure of the valves. The use of the valves is to prevent the blood returning from the artery into the ventricle, when the latter dilates. Behind each valve is a pouch, called the *sinus of Valsalva.* The pulmonary artery passes upwards, and backwards to the under side of the arch of the aorta, and there divides into two branches, one for each lung, the branch for the right lung being the longest and largest. The diameter

of the pulmonary artery is the same as that of the aorta, but its parietes are thinner.

The *left auricle* is concealed by the right and by the ventricles. Its shape is quadrangular or square, and into each of its four angles one of the pulmonary veins enter. Its parietes are muscular, smooth, and rather thicker than those of the right auricle. Its ear-like appendage is narrower and more crooked than that of the right auricle, and the *musculi pectinati* also enter into its structure. The opening between it and the left ventricle is likewise called *ostium venosum*. The partition between the auricles is sometimes imperfect in the adult.

The *left ventricle* is a conical cavity, and forms the apex of the heart. Its parietes are much thicker than those of the right ventricle. Internally, its surface is roughened by numerous *columnæ carnæ*, which become tendinous (*chordæ tendinæ*) where they are attached to the bicuspid or *mitral valve*. This valve, which consists of two folds or leaflets of the lining membrane of the ventricle, has its base attached to the margin of the ostium venosum, and its edges opening downwards into the ventricle: consequently when the ventricle contracts, it closes the opening, and the blood passes out by the aorta. The orifice of the aorta is supplied with three semilunar valves, arranged precisely like those at the mouth of the pulmonary artery.

The nutritious vessels of the heart are the right and left coronary arteries. The veins accompanying them empty into the right auricle. The nerves are branches of the sympathetic, supplied by the cardiac plexuses.

The *pericardium* is a membranous sac, consisting of two layers, in which the heart is loosely enveloped. The external layer is fibrous, white, and inelastic; the internal layer is serous, lines the external, and is reflected over the heart and roots of the vessels. It gives to the heart its smooth shining appearance, and the fluid it secretes lubricates the surface of the organ and allows it to move freely in the pericardium.

The cavities of the heart are lined by a serous membrane similar to that of the blood-vessels.

Blood-Vessels.

There are two sets of blood-vessels, one of which, the arteries, carries the red or oxygenated blood from the heart and distributes it to the different parts of the body; and the other, the veins, carries dark blood, collecting it from the various parts of the body, and returning it to the heart.

The Arteries.

The arteries are composed of three coats, an external, a middle, and a serous one.

The *external* coat is formed of *cellular* tissue, and is firm and strong, not yielding on the application of a ligature.

The *middle* coat is *fibrous* and elastic, having its fibres arranged circularly. It is readily divided by a ligature.

The *internal* coat is a delicate serous membrane, easily torn. Its secretion lubricates the surface of the artery, and facilitates the passage of blood.

The small arteries which ramify on the coats of the arteries to nourish them, are called *vasa vasorum*. The sympathetic furnishes the arteries with nerves.

The Aorta, and its Branches.

The aorta is the main trunk of the arterial system; it arises from the upper and posterior end of the left ventricle, and passing upwards and backwards towards the left side forms a curvature, called its arch, the summit of which is about an inch lower than the upper end of the sternum. Near the origin of the arch there is generally an enlargement or dilatation of the aorta, called its greater *sinus*. After forming its arch the aorta passes to the left side of the spine, about the third or fourth dorsal vertebra, and descends through the thorax to the hiatus aorticus of the diaphragm, through which it passes into the abdomen, and terminates in front of a space between the fourth and fifth lumbar vertebræ, by dividing into two large trunks called the *primitive iliacs*. In its descent through the thorax and abdomen, it is in contact with the left side of the bodies of the vertebræ.

It receives the name of *thoracic aorta*, while passing through the thorax, and *abdominal*, while passing through the abdomen.

The *coronary arteries* are the first branches given off by the aorta; they are distributed to the heart.

The *arteria innominata* is the next branch; it is given off from the arch of the aorta, and after ascending about an inch and a half obliquely towards the right side, divides in front of the trachea into the *right carotid*, and *right subclavian*. The *right carotid* ascends nearly as far as the os hyoides, and divides into the external and internal carotids.

The *left carotid* arises from the arch of the aorta, and passing to the left side of the neck divides, as the right, into the external and internal carotids.

The external carotid is distributed to the more superficial parts of the head and neck, and the internal goes to the brain and eye.

The following principal branches are given off from the *external* carotid, viz. the *superior thyroid* which goes to the thyroid gland; the *lingualis* to the tongue; the facial to the face; the *inferior pharingeal* to the pharynx; the *occipital* to the integuments on the back part of the head; the *posterior auricular* to the integuments of the side of the head; and the *anterior, posterior,* and middle *temporal*, which go to the muscles and integuments on the side and back part of the head.

The *internal maxillary* artery commences at the bifurcation of the external carotid, and winds around the neck of the lower jaw to supply the back portions of the mouth and palate. Its course is very tortuous, and it gives off numerous branches, of which the following are the principal: the *tympanitic,* to the tympanum, or drum of the ear, through the glenoid fissure; the *meningea parva,* to the dura mater through the foramen ovale; the *meningea magna* or *media,* to the dura mater through the spinal foramen; the *inferior dental,* to the teeth through the posterior mental foramen; the *deep temporal,* two in number, which go to the temporal muscle; the *pterygoid* and *buccal* to the muscles and lining membrane of the cheek; the *superior*

alveolar or *maxillary* to the *molar teeth, antrum and gums;* the *infra orbital* enters the infra-orbital canal, and is distributed to the canine and incisor teeth, to the antrum, and to the muscles in front of the upper jaw; the *superior palatine* goes to the mouth and palate; the *superior pharyngeal* to the pharynx and Eustachian tube; and the *spheno-palatine* to the lining membrane of the nose, entering through the spheno-palatine foramen.

The vertebral and internal carotid arteries supply the brain; the former enter through the foramen magnum occipitus, and uniting form a large trunk, called the basilar, which passes along the median line of the pons varolii, giving off several branches; the principal being the *superior cerebellar,* and the *posterior cerebral* arteries.

The carotid enters the cranium through the carotid canal, and divides into the *ophthalmic, middle cerebral,* and *anterior cerebral* arteries.

The arteries are united in front and behind by branches called *anterior* and *posterior* communicating, and by this a circle, called the circle of Willis, is formed.

Subclavian Artery.

On the left side the subclavian arises from the arch of the aorta, and on the right from the innominata. The right is consequently shorter, and more superficial than the left.

The subclavian passes out of the thorax over the first rib, and usually gives off five branches, viz.

The *vertebral,* which is the first and largest, and which passes through the foramina of the spinous processes of the six upper cervical vertebræ, and enters the cranium through the occipital foramen.

The *inferior thyroid,* which goes to the thyroid gland, and also gives off the ascending cervical to the muscles of the neck.

The *superior intercostal,* to the two upper intercostal spaces.

The *internal mammary,* which enters the thorax, and pass-

ing down over the cartilages of the ribs, gives off branches to the thorax, diaphragm, and abdomen.

The *posterior cervical*, which passes to the back of the neck to be distributed on the muscles there.

After giving off these branches the subclavian artery goes to the axilla or arm-pit, passing between the first rib and the subclavius muscle, where it loses the name of subclavian and takes that of *axillary*.

The *axillary* artery, also usually sends off five branches, though there is much irregularity in this respect.

The *supra-scapular*, to the muscles of the scapula.

The *external mammaries*, mostly four in number, to the shoulder, axilla, and muscles on the front of the thorax.

The *scapular* to the arm-pit, and the muscles on the back of the thorax.

The *anterior circumflex* to the parts in front of the joint; and the *posterior circumflex* to the posterior parts of the joint and the deltoid muscle.

From the axilla to the elbow joint the artery descends at the inner side of the arm on the edge of the biceps flexor muscle, and is called *brachial*.

The *brachial artery* gives off four branches.

The *profunda major* to the outer portions of the arm.

The *profunda minor* to the internal face of the triceps at its lower part, and to the internal condyle.

The *nutritious artery* to the bone through the nutritious foramen.

The *anastomotic*, which passes around the internal condyle, and anastomoses with the ulnar recurrent.

At the elbow joint the brachial artery divides into the radial and ulnar arteries.

The *radial* is the smaller of the two, and except at the wrist is the more superficial. It descends at the outer side of the arm between the tendons of the supinator radii longus and flexor carpii radialis muscles. In its course it gives off the following branches, viz.

The *radial recurrent*, which is distributed about the joint, and anastomoses with the profunda major.

The *superficialis volæ*, which is distributed to the palm of the hand.

The *dorsalis carpi* to the back of the wrist.

The *magna pollicis* to the thumb; this is one of the terminal branches of the radial.

The *radialis indicis* is connected at its origin with the last, and is distributed on the radial side of the fore-finger.

The *palmaris profunda* is the third terminal branch of the radial; it crosses the hand beneath the flexor tendons, forming the arcus profundus, from which branches are sent to the interossei muscles, and uniting at the ulnar side of the hand with the cubitalis manus of the ulnar artery.

The *ulnar artery* is deep seated; it passes from the internal condyle along the inner side of the arm between the tendons of the flexor carpi ulnaris, and flexor sublimis muscles. At the wrist it is superficial, and its pulsations may be distinctly felt; it passes over the annular ligament, and, in the palm, forms the superficial arch.

The following are the branches it sends off:

The *ulnar recurrent*, which is distributed to the muscles of the internal condyle, and anastomoses with the anastomotic.

The *interosseus*, which divides into an anterior and a posterior interosseous branch; the anterior descends the arm, in contact with the interosseous ligament, giving off branches in its course to the deep seated muscles; near the wrist it perforates the ligament, and is distributed to the back of the wrist and hand; the posterior branch soon perforates the interosseous ligament, to be distributed to the extensor muscles of the fore-arm.

The *dorsalis manus* is given off at the lower end of the fore-arm, and distributed upon the back of the hand.

The *superficial arch* (*arcus sublimis*) is formed by the continuation of the radial artery beneath the palmar fascia, from it a branch is sent to the ulnar side of the little finger, followed by three others (digital arteries), each of which on arriving at

the heads of their metacarpal bones, divides into two branches, a digito-radial, and a digito-ulnar, to supply the sides of the fingers.

Branches of the Thoracic Aorta.

In descending through the chest the aorta gives off the following branches.

The *bronchial arteries*, generally but one for each lung, though sometimes two or more, pass into the root of the lungs, and are distributed along the ramifications of the bronchia. They are the nutritious arteries of the lungs.

The *œsophageal arteries*, mostly five or six small twigs, arise one after the other from the aorta, and go to the œsophagus.

The *intercostal arteries*, ten on each side, supply the ten inferior intercostal spaces, the two upper spaces being supplied by the subclavian. Those for the right side are longer than the left in consequence of having to cross the spine behind the œsophagus and the vena azygos. Each artery passes along the grooves in the lower margin of the rib for about two-thirds of the length of the latter.

Branches of the Abdominal Aorta.

The aorta in its descent through the abdomen gives off several branches viz.

The *phrenic*, two in number, which go to the diaphragm, and are chiefly distributed on its concave surface.

The *cœliac*, a large trunk, about half an inch in length, which is given off opposite the junction of the last dorsal with the first lumbar vertebra. It divides into three branches—the gastric, hepatic, and splenic.

The *gastric* is the smallest branch and goes to the lesser curvature of the stomach.

The *hepatic* goes to the liver, entering through the transverse fissure; it gives off a branch to the greater curvature of the stomach, called the *right gastro-epiploic;* and another to the gall bladder, called the *cystic*.

Fig. 27.

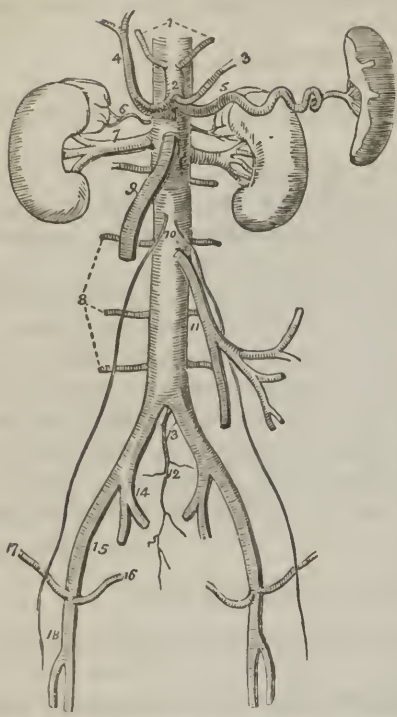


Fig. 27. The abdominal aorta and its branches.
1 Phrenic arteries; 2 cœliac artery; 3 gastric artery; 4 hepatic artery; 5 splenic artery; 6 supra-renal artery of the right side; 7 right renal artery; 8 lumbar arteries; 9 superior mesenteric; 10 spermatic arteries; 11 inferior mesenteric; 12 sacra media; 13 common iliacs; 14 internal iliac of the right side; 15 external iliac; 16 epigastric artery; 17 circumflex iliac; 18 femoral artery.

The *splenic*, which is the largest branch of the cœliac, goes to the spleen; it gives off several small branches to the pancreas, and the *vasa brevia*, and *left gastric* arteries to the left half of the greater curvature of the stomach.

The *superior mesenteric* arises from the aorta about half an inch below the cœliac, and is nearly as large; it is distributed to the whole of the small intestine, and to the right side of the large; three branches go to the latter, viz. the *ileo-colic* to the cœcum, and a portion of the ileum; the *colica dextra* to the ascending colon; and the *colica media* to the transverse colon.

The *capsular arteries*, generally but one on each side, go to the supra-renal capsules.

The *renal* or *emulgent arteries*, mostly one for each side, are large, and go outwards transversely to the kidneys; before entering the fissure of the kidneys they divide into three or four branches.

Fig. 28.

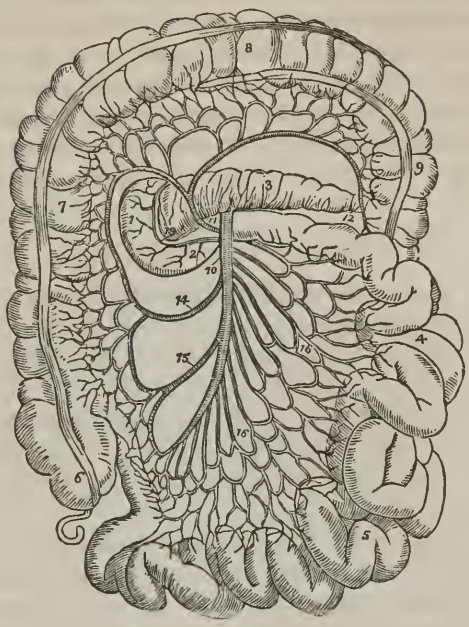


Fig. 28. Distribution of the superior mesenteric artery. 1, 2 Duodenum; 3 pancreas; 4 jejunum; 5 ileum; 6 cœcum and appendix vermiformis; 7 ascending colon; 8 transverse colon; 9 commencement of the descending colon; 10 superior mesenteric artery; 11 colica media; 12 the branch which anastomoses with the colica sinistra; 13 the branch of the superior mesenteric, which anastomoses with the pancreatico-duodenalis; 14 colica dextra; 15 ileo colic; 16, 16 branches to the small intestines.

The *spermatic arteries* arise from the aorta just below the emulgents, or sometimes from the latter, and pursuing a tortuous course, pass through the abdominal rings, and divide into several branches before reaching the testicle. In the female the spermatics are chiefly distributed to the ovaries.

The *inferior mesenteric* usually arises from the aorta about an inch above its termination. It is much smaller than the superior mesenteric, and divides into three principal branches, called the

superior, middle, and *inferior left colic arteries,* which are distributed to the left side of the colon. It also gives off a branch, the *superior hæmorrhoidal,* to the upper part of the rectum.

The *lumbar arteries,* commonly five on each side, correspond with the intercostales, and are distributed chiefly to the loins.

The *middle sacral artery* is a small artery arising from the bifurcation of the aorta, and passing down the sacrum to the coccyx.

The Primitive, or common Iliacs.

The aorta, as mentioned, divides at the fourth lumbar vertebra into the two iliacs, which pass outwards and downwards to the sacro-iliac junction, where they divide into the internal and external iliac.

The *internal iliac,* or *hypogastric,* is a short trunk descending from the sacro-iliac junction into the cavity of the pelvis, and giving off numerous branches, of which the following are the principal:

The *ilio-lumbar,* which is distributed to the loins.

The *lateral sacral,* which divides into four branches to enter the anterior sacral foramina.

The *obturator artery,* which passes out of the pelvis at the obturator foramen, and is distributed by two branches to the obturator and adductor muscles.

The *middle hæmorrhoidal,* which goes to the rectum to the vesiculæ seminales, and to the prostate gland.

The *vesicle arteries* consisting of several branches, which go to the bladder.

The *gluteal artery,* which is a large trunk and one of the terminating branches of the internal iliac, passes out of the pelvis at the upper part of the sacro-sciatic notch, to be distributed by two or three branches to the glutei muscles.

The *ischiatic artery,* which is the anterior of the two terminal branches of the internal iliac, passes out of the pelvis through the sciatic notch, supplying the floor of the pelvis and back of the thigh. Before leaving the pelvis the ischiatic artery

gives off a large branch, called the *internal pudic*, which is distributed to the muscles of the perineum and to the penis.

The *internal pudic* gives off several branches, viz.

The *lower hæmorrhoidal*, to the anus and rectum.

The *transversus perineal*, to the muscles and integuments of the perineum. In the lateral operation for stone it is always cut.

The *urethro-vulvar*, to the corpus spongiosum of the penis.

The *dorsi penis*, to the back of the penis.

And the *cavernous artery*, to the corpus cavernosum.

The External Iliac.

The external iliac artery extends from the sacro-iliac junction to Poupart's ligament, under which it passes to the lower extremity, and is then called the femoral artery. Near Poupart's ligament it gives off two branches; one, called the *epigastric*, ascends obliquely upwards and inwards, to be distributed upon the anterior parietes of the abdomen. In its course it passes between the two abdominal rings, and consequently in the operation for hernia is in danger of being cut.

The other, the *circumflex iliac*, also passes obliquely upwards to the crest of the ilium, and is distributed to the muscles of the loins and abdomen.

The Femoral Artery.

This artery is a continuation of the external iliac; it extends from Poupart's ligament down the inner side of the thigh, about two-thirds of its length, where it perforates the tendon of the adductor magnus muscle, and takes the name of *popliteal*. The *femoral* artery sends off the following branches:

The *superficial artery of the abdomen* goes obliquely to the integuments of the lower part of the abdomen, and is there distributed.

The *external pudics*, two or three small arteries which go to the integuments.

The *profunda*, a large artery going to the muscles of the upper part of the thigh. It gives off a large branch called the

external circumflex, which supplies the muscles on the outside of the thigh; and another, called the internal circumflex, to the muscles on the inside of the thigh. Several smaller branches, called perforating arteries, are given off by the profunda and the internal circumflex.

The *anastomic artery* is sent off by the femoral, and descending to the knee anastomoses with the internal articular arteries.

The Popliteal Artery.

The popliteal is a continuation of the femoral artery, and extends from the adductor tendon to the opening in the interosseous ligament below the head of the tibia, where it divides into the anterior and posterior tibial.

It gives off the *superior, middle,* and *inferior* articular arteries to the knee joint; and the *gemellar*, two in number, to the heads of the gastrocnemius muscle.

The Anterior Tibial.

The anterior tibial artery perforates the interosseous ligament, and descends the leg in front of it to the ankle joint, giving off in its course numerous branches, as follows:

The *recurrent tibial*, which goes upwards, and anastomoses with the arteries about the knee joint.

The *internal malleolar*, to the inner side of the ankle joint.

The *external malleolar*, to the outer side of the ankle joint.

The *tarsal*, to the external ankle and to the tarsus.

The *metatarsal*, to the toes by three branches. It forms an arch at the roots of the metatarsal bones.

The *dorsal*, to the outer side of the great toe, and the inner side of the second toe.

And the *pedal*, a branch passing through the first interosseal space to the sole of the foot to join the external plantar artery.

The Posterior Tibial.

This artery descends from the head of the tibia to the os calcis in a line from the middle of the ham to the external ankle. It is beneath the muscles of the calf of the leg.

The *peroneal* arises from the posterior tibial, and dividing into several branches is distributed to the muscles on the back of the leg.

On reaching the os calcis, the posterior tibial artery divides into the internal and external plantar arteries.

The *internal plantar* is a small artery, which passes along the inner margin of the foot, and is distributed to the great toe.

The *external plantar* is considerably larger than the last, and passes obliquely across the sole of the foot to the outer margin, forming an arch from which branches (*digital arteries*) are given off to the interosseous spaces, and to the toes.

The Veins.

The veins collect the blood from the different parts of the body, and convey it to the heart. They are much more numerous than the arteries; the deep seated arteries generally having two accompanying veins called *venæ comitas*. All the venous blood is emptied into the right auricle through two large trunks, called the ascending and descending vena cava. The veins of the head, upper extremities, and thorax, unite to form the descending vena cava.

The parietes of the veins, like the arteries, are formed of three coats; these coats, however, are much thinner than those of the arteries, which render the veins flaccid when empty and easily distinguishable from the arteries, the elastic middle coat of which enables them to retain the cylindrical shape.

The veins are likewise furnished with numerous valves, formed of two or three crescentic folds of the lining membrane, which open towards the heart.

In the brain and the bones the canals or channels which convey the venous blood, are termed *sinuses*, and are lined by the internal coat of the veins.

Veins of the Head and Neck.

Most of the veins of the head and neck have the same names as the arteries they accompany.

The internal maxillary, occipital, temporal, and other of the principal trunks join together to form the *external jugular*, which is a superficial vein extending from the parotid gland to the subclavian vein, into which it empties behind the outer end of the clavicle. The external jugular is covered externally by the skin, superficial fascia, and platysma-myoides muscle.

The *internal jugular vein* is larger than the external; it extends from the base of the occiput to the posterior face of the clavicle near its sternal end, where it unites with the subclavian to form the vena innominata. It receives the blood from the sinuses of the cranium, and from some of the superficial veins.

Fig. 29.

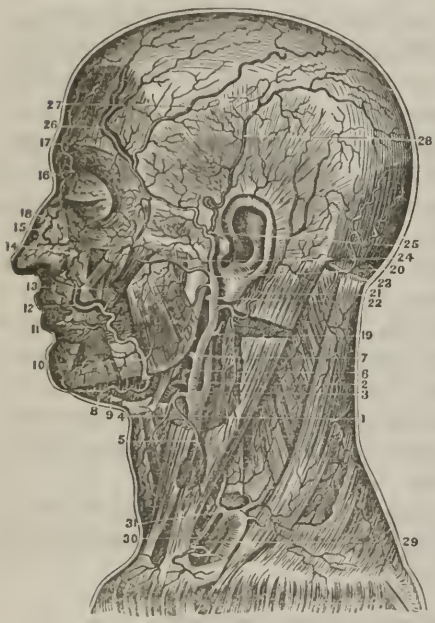


Fig. 29. A lateral view of the veins of the head and neck. 1 Vena innominata; 2 internal jugular; 3 external jugular; 4 superior thyroid; 5 inferior thyroid; 8 submental; 10 inferior maxillary; 11, 12 superior and inferior labial veins; 13 angularis nasi; 14 anterior facial; 15 nasalis externus; 16 supra orbital; 18 infra orbital; 19 fascialis posterior; 21 occipital vein; 23 auricularis posterior; 25 temporalis superficialis; 26, 27, 28 temporalis anterior, middle, and posterior.

Sinuses of the Dura Mater.

The channels, or passages, by which the blood is removed from the brain, are formed between the lamina of the dura mater, and termed *sinuses.*

The principal are:

The *superior longitudinal sinus,* a channel of a triangular shape, commencing at the foramen cœcum by a small vein from the root of the nose, and gradually increasing in size forms an arch in the middle line of the arch of the cranium, which terminates at the internal occipital cross in an enlargement called the *torcular herophili,* where it receives the blood from other sinuses.

The *inferior longitudinal sinus,* is situated between the lobes of the cerebrum in the falx cerebri; it also forms an arch, and empties into the straight sinus at the anterior edge of the tentorium.

The *straight* or *fourth sinus,* extends along the median line of the tentorium, from the falx cerebri to the torcular herophili.

The *vena azygos,* is a short trunk formed by the *venæ Galeni,* which empties into the fourth sinus.

The *lateral sinuses,* on either side, commence at the torcular herophili, and pass over the occipital, parietal, and temporal bones to the posterior foramen lacerum, through which they pass out of the cranium, and form the commencement of the internal jugular vein.

The *circular sinus,* surrounds the pituatary gland in the sella turcica, communicating on either side with the cavernous sinuses.

The *cavernous sinuses,* receive the blood from the ophthalmic veins; they are venous cells of a spongy structure, situated on either side of the sella turcica.

The *superior* and *inferior* petrosal sinuses, are small channels, traversing the petrous portion of the temporal bone to empty into the lateral sinus.

The *anterior occipital sinus,* passes across the basilar process of the occipital bone, forming a communication between the two inferior petrosal sinuses.

The *posterior occipital sinus* extends from the torcular herophili in the lower edge of the falx cerebri to the foramen magnum, where it divides and empties into the lateral sinus on either side.

The name of *emissaries of Santorina* has been given to the small veins, which pass through the minute foramina in the bones of the cranium, to communicate with the sinuses of the brain.

The Veins of the Upper Extremities.

These veins are superficial and deep seated; the latter accompany the arteries, and take the same name; two veins usually accompany one artery.

The superficial veins lie between the skin and the brachial aponeuroses. They anastomose frequently with each other, commence generally on the back of the fingers, and finally unite into two principal branches, called the cephalic and basilic vein.

The *cephalic vein* commences on the thumb, fore-finger, and back of the hand, and passes up the radial side of the fore-arm to the elbow, where it is joined by the median cephalic, and pursuing its course up the outer side of the arm, empties into the subclavian vein beneath the clavicle.

The *basilic vein* commences on the little finger, and passes up the ulnar side of the fore-arm to the elbow, where it receives the median basilic, and continuing its course up the arm along the inner margin of the biceps muscles, where it is joined by the venæ comites, and becomes the axillary vein.

The *median vein* collects the blood from the palm of the hand, wrist, and front of the fore-arm, and ascends in front of the fore-arm to within a few inches of the elbow joint, where it divides into two branches, one of which called the *median cephalic* runs outwardly to join the cephalic vein; the other, the *median basilic*, goes inwards to join the basilic vein.

The *axillary vein* is formed by the union of the basilic and the brachial veins; it passes up the arm in the same sheath with

the axillary artery to the axilla, where, like the artery, it takes the name of subclavian.

The *superior* or *descending vena cava* is formed by the junction of the right and left *innominata;* it empties into the right auricle of the heart.

The Veins of the Lower Extremities.

The veins of the lower extremity, like those of the upper, are superficial and deep seated, and the latter generally take the name of the artery they accompany.

The *popliteal vein* commences behind the head of the tibia, and extends upwards along with the popliteal artery to the perforation in the tendon of the adductor magnus muscles, after which it takes the name of femoral.

The *femoral vein* is a continuation of the popliteal, and passes upwards along with the artery of the same name to Poupart's ligament, where it becomes the external iliac vein.

The *small* or *external saphena vein* is superficial, commencing by the union of several small branches at the outer side of the top of the foot and ankle, and passing up the posterior and outer side of the leg to the ham, empties into the popliteal vein.

The *great* or *internal saphena vein* is also superficial; it commences by a number of roots from the sole, and the inner and upper part of the foot, and ascending along the internal face of the leg, and thigh to within about an inch and a half of Poupart's ligament empties into the femoral vein.

Veins of the Abdomen.

The principal of these are the external and internal iliacs; the spermatics of the testicles; the renales or emulgents from the kidneys; the hepatic in three branches, from the liver, all of which empty directly into the ascending vena cava; the vesical plexus from the bladder, and the uterine plexus from the uterus, which empty into the internal iliac; and the hæmorrhoidal veins from the rectum, which empty into the inferior mesenteric.

The *inferior* or *ascending vena cava* commences between the fourth and fifth lumbar vertebræ, by the union of the iliac veins, and ascending along the spinal column at the right of the aorta, receives in its course the abdominal veins, and passing through the diaphragm into the chest, empties into the right auricle of the heart.

The Portal Vein.

The portal vein collects the blood from all the viscera of the abdomen, and entering the transverse fissure of the liver, is included with the biliary duct and hepatic artery, in a common investment of cellular tissue, called the capsule of Glisson; it ramifies through the substance of that organ previous to entering the general circulation.

The veins which contribute to form the portal are: the superior and inferior mesenteric, the splenic, the gastric, and the pancreatic; the trunk of the portal vein, which is about four inches in length, extends from the posterior face of the pancreas to the transverse fissure of the liver.

Peculiarities of the Fœtal Circulation.

The circulation of the fœtus, in consequence of the absence of respiration, differs very materially from that function in the adult. For its nutrition and development an alliance through the circulatory organs of the mother is necessary.

The peculiarities of the fœtal circulation consist in: the *ductus venosus*, a vein leading from the umbilical vein along the margin of the liver to the ascending vena cava; the communication of the right and left auricles through the *foramen ovale;* and the *ductus arteriosus*, a branch from the pulmonary artery, which conducts the blood returned from the head into the aorta just behind the origin of the left subclavian artery. When the current of the blood is changed after birth, by respiration, the ductus venosus and arteriosus, shrivel up into ligamentous cords, and the aperture between the auricles is closed by the adhesion of its valve.

The *placenta* is the organ through which the effete blood of the fœtus is regenerated, or ærated. It is closely attached to the uterus of the mother, and the change in the blood is probably effected by interstitial circulation, as there appears to be no direct connection of blood-vessels between the mother and fœtus. The umbilical cord extends from the placenta to the umbilicus of the child, and consists of one *umbilical vein* and two *umbilical arteries;* the latter are twisted around the former, and conduct the blood to the placenta; the former conveys the ærated blood back again to the child. Thus it will be observed, that the umbilical vein and the ductus venosus carry *arterial* blood; and the umbilical arteries and the ductus arteriosus carry *venous* blood.

Commencing at the placenta, the circulation of the fœtus pursues the following course. The blood passes along the umbilical vein to the umbilicus of the child; it then penetrates the abdomen, after which it divides into two currents, one of which goes through the ductus venosus into the ascending vena cava; the other passes through the vena portarum to the liver. The portion sent to the liver, after ramifying through that organ, is collected by the hepatic veins, and likewise discharged into the ascending cava.

The contents of the ascending cava are emptied into the *right* auricle of the heart, from which it passes into the *left* auricle through the ostium venosum. From the left auricle it passes into the left ventricle, by which it is distributed by means of the aorta throughout the system. That portion of the blood which goes to the head and upper extremities, is collected in the descending vena cava, and also discharged into the *right* auricle, from whence it passes into the right ventricle, from which a small portion goes into the pulmonary artery, and the remainder into the aorta through the ductus arteriosus.

It will be perceived, therefore, that all parts of the body receive mixed arterial and venous blood, with the single exception of the liver, to which organ the blood is sent from the placenta unmixed.

The umbilical arteries are continuations of the internal iliacs; they pass up at the sides of the bladder and go to the navel, from which point, as mentioned, they form part of the umbilical cord. After the change in the circulation, at birth, they become the round ligaments of the bladder.

The Lymphatics.

The lymphatics, so called from the transparent color of the fluid they carry, are found in all parts of the body; their office is that of interstitial absorption, by which the effete parts of the body are removed, and room made for new depositions. They are small, transparent, cylindrical vessels, rarely exceeding a line in diameter. Like the arteries, they have three coats, and when distended they present a knotted appearance, which is owing to their being furnished with valves and sinuses.

In the intestines the lymphatics, which commence in the villous coat, are frequently called *lacteals*, and contain the chyle.

The lymphatic is also spoken of as the absorbent system.

Numerous lymphatic glands exist in the mesentery, groin, axilla, and neck, into which the lymphatic vessels enter, and pass out again. They form frequent anastamoses with each other, and become larger and less numerous, as they proceed from their origins.

All the lymphatic vessels from the various parts of the body collect into two large trunks, one of which is placed on each side of the body.

The trunk on the right side receives the lymphatics from the right side of the head and neck, and the right upper extremity and lung; it is short, and discharges its contents into the venous system at the junction of the right internal jugular and subclavian vein. The trunk on the left side, called the *thoracic duct*, receives the contents of the lymphatics and chyliferous vessels of the rest of the body; it is the principal lymphatic vessel of the body, and commencing in the abdomen with an enlarged extremity, called *receptaculum chyli*, which receives the contents of the lacteals and the lymphatic vessels of the

lower extremities, it passes into the thorax through the diaphragm, and ascending through the posterior mediastinum in front of the spinal column, along with the aorta, empties its contents at the junction of the left subclavian and internal jugular veins.

Physiology of the Circulation.

By the circulation of the blood is understood that function by which the arterial blood, fitted for nutritive purposes in the lungs, is distributed to every part of the body. The organs and vessels, by which this function is accomplished, viz. the heart, arteries, veins, and the capillary vessels, intermediate between the arteries and veins, constitute the vascular system.

The heart is the centre of the circulation, and may be considered as a double organ, or as two distinct hearts brought together for convenience of package,—the right one containing black or venous blood only, and the left one red or arterial blood only. The circulation from the two hearts, or the two sides of the heart, are entirely distinct; that from the right is called the lesser or pulmonic circulation, and that from the left, the greater or systemic.

Commencing at the heart, the route of the circulation is as follows; the venous blood from all parts of the body is collected in the *right auricle*, from which it passes through the auriculo-ventricular orifice into the *right ventricle;* thence it is sent through the pulmonary artery to the lungs to be ærated, after which it is collected by the pulmonary veins, and carried to the *left auricle*, out of which it passes through the auriculo-ventricular orifice into the *left ventricle*, from whence it is distributed by means of the aorta throughout the system.

The chief propelling power of the circulation is the alternate contraction and dilatation of the heart. This motion of the heart is constant and unremitting during life; its cessation, even for a short time, terminating existence. It is independent of the nervous system, and also of the stimulus of the blood, as it continues after all nervous communication is cut off, and

when the heart is empty, and in fact after it has been removed from the body. The ventricles are the principal agents in the propulsion of the blood, for which purpose they have strong muscular parietes; the auricles have but slight contractile powers, their chief use being as receptacles. The contraction of the auricles and ventricles is not synchronous. The two auricles act together, as do also the two ventricles. The contraction of the auricles which forces the blood into the ventricles, is immediately followed by the contraction of the ventricles, during which the auriculo-ventricular valves are closed to prevent the regurgitation of the blood into the auricles, and consequently it passes into the aorta and pulmonary artery. Dilatation of all the cavities succeeds their contraction. The term *systole* has been given to the contraction of the heart, and that of *diastole* to its dilatation. The pulse is caused by the projection of the blood into the arteries from the ventricle, and corresponds with the contraction or systole. The contractile nature of the muscular coat of the arteries aids in the propulsion of the blood, and also in the production of the pulse. In the capillary and venous circulation there is no pulse.

By the time the blood reaches the capillaries, the force of the heart is lost. Of the circulation carried on in this system of vessels but little more can be said than that it is due to vital action. The nutritive properties of the arterial blood are here yielded up, and the effete portions enter the veins to be returned to the heart and lungs, there to be given off, or again vitalized.

The forces which aid in returning the blood to the heart are: the suction power of the heart, muscular motion, and inspiration. When the heart dilates, and when the chest is expanded by the descent of the diaphragm, a vacuum is created, which the blood rushes towards the chest to fill.

At every contraction of a muscle, the veins of the part are pressed upon, and their valves allowing the flow of the blood but in one direction, towards the heart, it must consequently be driven on in that direction.

The muscular force of the heart has been variously estimated

by different observers, some allowing it to be equal to but ten or fifteen pounds, other estimating it at thirty or forty. A true estimate is of course exceedingly difficult to arrive at, as it is greatly modified by age, sex, temperament, and a variety of causes.

The usual number of contractions of the heart, or pulsations, per minute, in the adult is from seventy to seventy-five. In youth they are more frequent, and in old age less so.

In the female sex the pulse is also more rapid than in the male. Temperament, muscular exertion, mental emotion, &c., all exercise a controlling influence over the action of the heart.

On applying the ear over the region of the heart, two distinct sounds are perceptible, during each beat of the heart. The first is a dull, lengthened sound; the second quick and sharp; they follow each other in quick succession, and are succeeded by a short interval of repose, after which they recur again, and so on. The first is synchronous with the contraction, and the second with the dilatation of the ventricles. About one-half the whole period between the commencement of one pulsation, and the commencement of the next is occupied by the first sound; one-fourth by the second; and the remaining fourth is the period of repose. The causes of the first sound are: the rush of the blood through the orifices of the aorta and pulmonary artery; the passage of the blood over the rough internal surfaces of the ventricles; the flapping of the auriculo-ventricular valves; the sound of muscular contractions; and the impulse of the heart against the chest.

The second sound is caused by the closure of the valves, at the mouths of the aorta and pulmonary arteries.

At each contraction of the heart, it is projected forwards, and strikes against the parietes of the thorax, in the region of the fifth and sixth ribs; the shock this occasions is called the *impulse* of the heart.

There is some variation in the capacity of the cavities of the heart, the right auricle and ventricle being somewhat more capacious than the left.

The circulation was discovered by *William Harvey* of London, in 1719.

Nervous System.

In this system are included the brain, spinal marrow, and nerves.

The material or *tissue* of which it is composed, is called *neurine*, and is of a soft, pulpy consistence.

This tissue consists of two portions, one of which is white or *medullary*, and of fibrous structure; the other gray or *cineritious*, and globular in structure.

The nerves are composed of the medullary substance, and consist of parallel fasciculi or bundles of fibres, capable of being subdivided into filaments. Each nerve, as well as each particular fibre, is enveloped in a sheath, called the *neurilemma*.

A *ganglion* is a knot occurring in the course of a nerve, and by which they obtain an increase of volume and power. Ganglia are of different sizes and shapes, and consist of a union of white and gray matter.

An *anastomose* is the junction of the filaments of the same nerve, or of different nerves.

A *plexus* is the junction or interchange of the larger fasciculi of the same nerve, or of different nerves, forming a network.

The Spinal Marrow.

The spinal marrow is contained within the vertebral canal, and extends from the atlas or first vertebra of the neck to the first or second lumbar vertebra. Its general form is cylindrical, though it is somewhat flattened in front and behind, and has an enlargement in the neck and loins. Its diameter, with the addition of its membrane, is much smaller than that of the spinal canal, by which provision injury from pressure is guarded against.

It is divided, longitudinally, into two symmetrical parts, by an anterior and a posterior fissure. The posterior fissure is somewhat deeper than the anterior. It has also a lateral fissure on each side, placed somewhat posterior to the middle, and passing inwards and forwards.

The spinal marrow is composed of medullary and cineritious

matter, the former being internal, and the latter external; the cineritious matter is also much more abundant than the medullary.

From the sides of the spinal marrow, thirty pairs of nerves are sent out, which, like the vertebræ, are divided into cervical, dorsal, lumbar, and sacral. Of these, eight pairs belong to the neck, twelve to the thorax, five to the loins, and five to the sacrum. Sometimes there is an additional pair, making thirty-one in all.

Each nerve arises by two roots, one of which comes from the anterior cord of the spinal marrow, and the other from the posterior cord. The posterior root is larger than the anterior, and upon it is a ganglion; the roots are separated by a process of pia mater, called the *ligamentum denticulatum*, and after penetrating the dura mater by separate foramina, unite to form a single trunk.

The lumbar and sacral pairs arise from the lower extremity of the spinal marrow, and form a cluster resembling the tail of a horse, hence the name of *cauda equina* has been applied to them.

Three membranes envelop the spinal cord; one, the external, is called the *dura mater;* another, the internal, is the *pia mater*, and the third, which is between the others, is the *arachnoidea*. The *dura mater* is continuous with that of the brain, and terminates below in a closed extremity; it is a white fibrous membrane, affording a loose investment to the spinal canal, except at the first cervical vertebra, to which it adheres firmly. Between it and the parietes of the canal is placed a quantity of loose cellular tissue containing fat and serum.

The *tunica arachnoidea* is placed next to the dura mater; it is very thin and transparent.

The *pia mater* adheres closely to the spinal marrow; it is a cellular membrane, made up almost entirely of blood-vessels; it sends processes into the anterior and posterior fissures of the medulla spinalis; below it terminates in round cord-like processes continuous with the roots of the nerves constituting the cauda equina. It is also continued along the nerves constituting their neurilemma or sheath.

The Brain.

The brain is contained within the bones of the cranium, and is oval in shape.

It is composed of cineritious and medullary matter, and consists of four principal parts, viz. the *medulla oblongata*, which is a continuation of the spinal marrow, or its superior part; the *pons Varolii*, called also *protuberantia annularis*, which is placed at the superior extremity of the medulla oblongata; the *cerebrum*, which occupies seven-eighths of the cavity of the cranium; and the *cerebellum*, which is situated at the base of the cranium.

Like the spinal marrow, the brain also is enclosed in three membranes,—the dura mater, tunica arachnoidea, and pia mater.

The dura mater is the most external, lining the whole of the cavity of the cranium, to the bones of which it is firmly attached. Its structure is fibrous. It consists of two lamina, from the internal of which several processes are formed. One of these, the *falx cerebri*, is situated under the middle line of the head, and extends from the crista galli in front to the tentorium behind, separating the hemispheres of the brain. Its breadth in front is about an inch, and behind about two, or two and a half inches. Another process is called the *tentorium*, and like the last is crescentic in shape; it is stretched horizontally across the cranium, separating the cerebellum from the posterior lobes of the brain. In front it is continuous with the falx cerebri. The *falx cerebelli* is a small triangular process, extending from the lower surface of the tentorium to the foramen magnum; it separates the two lobes of the cerebellum.

The *tunica arachnoidea* is placed between the dura mater and pia mater; it is a thin, transparent, serous membrane, and adheres closely to the pia mater.

The *pia mater* is a cellular membrane, placed next to the substance of the brain, and extending to the bottom of the fissures between the convolutions, consequently its internal surface is very irregular; its external surface, being in contact with the arachnoid membrane is smooth and shining.

This membrane is made up almost entirely of blood-vessels. Clusters of small, white, granular bodies, called *glands of Pacchioni* are contained in its meshes, the use of which is not known.

The Medulla Oblongata.

The medulla oblongata, as mentioned, is the upper part of the spinal cord; it extends from the margin of the atlas to the pons Varolii, and is about an inch in length, and three-fourths of an inch in breadth at the base; it gradually increases in size as it ascends. Like the medulla spinalis, it is divided by an anterior and a posterior fissure into symmetrical halves, and each half consists of three portions, viz. the *corpora pyramidalia*, two cord-like cylindrical portions, one on each side of the anterior fissure, and united at their lower extremities by an interchange of fibres. The *corpora olivares*, are two oval bodies situated posterior to the pyramidalia and separated from them by a fissure. The *corpora restiformia* are elliptical elevations, situated at the posterior part of the medulla oblongata, and separated from each other by the posterior fissure. They are about one inch in length, and united below by transverse fibres of medullary matter.

The Pons Varolii.

The pons Varolii, or annular protuberance, is a large cuboidal mass of medullary matter, placed at the top and in front of the medulla oblongata, and resting on the basilar process at the base of the cranium; its internal fibres are longitudinal, being a continuation of those of the medulla oblongata; externally they are transverse. A superficial fossa divides it into two symmetrical halves. Four *crura* proceed from it, two to the cerebrum, and two to the cerebellum.

The Cerebellum.

The cerebellum is situated in the posterior fossa of the cranium, beneath the posterior lobes of the cerebrum, and separated from it by the tentorium.

It is oblong and flattened, having its long diameter transverse, and constitutes about one-sixth part of the brain. It is divided by a longitudinal fissure into two lobes or hemispheres. On making a vertical section through one of the lobes, an arborescent arrangement is presented, caused by the intermingling of the gray and white matter, to which the name of arbor vitæ has been given. A fasciculus of medullary matter, called the *crus cerebelli*, connects each lobe of the cerebellum with the pons Varolii; another fasciculus, called the *valve of the brain*, extends from the corpus restiforme of the medulla oblongata to the under surface of the cerebellum.

Externally the cerebellum is formed of cineritious, and internally of medullary matter.

The Cerebrum.

The cerebrum is a large ovoid mass, six or seven times as large as the cerebellum, and weighing from three to four pounds. It is divided into two parts or hemispheres by the deep fissure above (superior longitudinal fissure), and each hemisphere is subdivided on its under surface into three lobes—anterior, posterior, and middle. The anterior and middle lobes rest upon the anterior and middle fossa of the cranium, and the posterior lobes upon the tentorium. The fissure of Sylvius is between the anterior and middle lobes. The surface of the cerebrum consists of a number of convolutions or gyri, separated from each other by deep fissures (sulci), which give it an exceedingly irregular, tortuous appearance.

The periphery of the convolutions to the depth of about a fourth of an inch is composed of cineritious substance, and the interior of medullary substance.

The longitudinal fissure completely separates the two anterior lobes from each other, extending between them to the base of the brain; the posterior lobes are also separated in the same manner. But between the middle lobes, a broad arched band of medullary matter, called the *corpus callosum*, extends from side to side at the bottom of the longitudinal fissure, connecting the

two hemispheres. This band is mostly composed of transverse fibres. The *crura cerebri*, coming from the anterior margin of the pons Varolii, also pass from the middle fissure to each hemisphere. They are two thick, cylindrical, white cords of longitudinal fibres, which terminate in the convolutions after expanding in all directions so as to constitute the principal part of the hemispheres. Between the crura are two white globular bodies, about as large as a pea, called the *eminentia mammillares*. In front of these is a soft mass of cineritious matter called the *tuber cinereum*. The term *infundibulum* has been given to a reddish, hollow, conical body, the base of which is on the tuber cinereum and the apex, extending to the *pituitary gland*. This latter is a light colored, vascular body, consisting of two lobes situated in the sella Turcica. A triangular arch of medullary matter, the base of which is continuous with the posterior part of the corpus callosum, and the apex joined to the eminentia mammillares by two crura, is called the *fornix*. A vertical septum, consisting of two lamina, and separating the lateral ventricles, having its upper extremity attached to the fornix, and its lower to the corpus callosum, is called the *septum lucidum*.

The *velum interpositum* is a reflection of the pia mater immediately beneath the fornix; the *plexus choroides* is a net-work of veins contained in its edges. The *pineal* gland is a small, reddish, conical body, placed upon the tubercula quadrigemina, and connected with the optic thalamus; it often contains particles of calcareous matter. The ancients imagined it to be the seat of the soul. The *tubercula quadrigemina* are four prominences situated on the upper part of the crura cerebri, and behind the optic thalamus; a passage under them is the aqueduct of Sylvius. The *thalami optici*, two in number, are situated on the superior face of the crura cerebri; they are convex above and internally, and are composed of a mixture of medullary and cineritious matter. Their posterior extremities have three rounded prominences, called *corpora geniculata*.

The *corpora striata* are two oblong masses of gray matter,

situated in front of the thalami optici, and at the bottom of the lateral ventricles.

In the brain are *five ventricles*, or cavities; two of them are called lateral, and the others, the third, fourth and fifth.

The *lateral ventricles* are situated in the centre of the hemispheres, and are separated from each other by the septum lucidum. They are horizontal and very irregular in shape; the roof is formed by the corpus callosum, and the floor by the fornix, thalami optici, and corpora striata. Each contains three depressions, called *cornua*, of which one is anterior, one posterior, and one inferior; an oblong eminence on the inner side of the posterior cornua is called *hippocampus minor*, or ergot; and a ridge on the floor of the inferior cornua is called *hippocampus major*. The lateral ventricles communicate with each other, and with the third ventricle by the foramen of Monro.

The *third ventricle* is situated between the thalami optici; it is a narrow, oblong cavity bounded above by the velum interpositum and the fornix, and below by the tuber cinereum, crura cerebri, and eminentia mammillares. It communicates with the lateral ventricles by the foramen of Monro, and with the fourth by the aqueduct of Sylvius.

The *fourth ventricle* is an irregular triangular cavity, situated between the pons Varolii, cerebellum, and medulla oblongata; above, it is bounded by the valve of the brain and the tubercula quadrigemina; its floor is formed by the *calamus scriptorius*. It communicates with the third ventricle.

The *fifth ventricle* is placed between the lamina of the septum lucidum, and has no communication with the other ventricles.

Nerves of the Cranium.

There are nine pairs of nerves arising from the cranium, which are designated numerically, as well as by their function or distribution.

The *olfactory* nerve, or *first* pair arises by three roots from the base of the brain at the corpora striatum which unite in the fissure of Sylvius. It passes forward, converging towards its

fellow, to the cribriform plate of the ethmoid bone, where it forms a large, soft bulb from which it sends filaments into the nose to supply the Schneiderian membrane.

The *optic nerve* or *second pair*, arises by a single broad root from the thalamus optieus and the tubereula quadrigemina, and going forward to the anterior part of the third ventriele, forms a junetion with its fellow in the form of the letter X, ealled the chiasm or erossing of the optie nerves, after whieh it enters the orbit of the eye to join the retina.

The *motor occuli*, or *third pair*, arises from the erus cerebri, and passing into the orbit through the sphenoidal foramen, is distributed to most of the museles of the eye-ball.

The *patheticus*, or *fourth pair*, arises by two roots from the valve of the brain, and entering the orbit through the sphenoidal foramen, is distributed to the superior oblique muscle of the eye-ball. It is the smallest of the nerves, eoming from the encephalon, and is not larger than a sewing thread.

The *trifacial*, *trigeminus*, or *fifth pair*, arises by three roots, from the medulla oblongata, and emerging from the side of the pons Varolii, enters a eanal of the dura mater at the fore part of the petrous portion of the temporal bone, where it forms a ganglion, ealled the ganglion of *Gasser*, from which proeeed three branches, viz. the ophthalmie, superior maxillary, and inferior maxillary.

The ophthalmie branch emerges through the sphenoidal foramen, and is distributed to the orbit, lachrymal gland, and integuments and museles of the forehead.

The superior maxillary branch passes through the foramen rotundum, and is distributed to the upper jaw and face.

The inferior maxillary branch emerges at the foramen ovale, and is distributed to the tongue, and to the muscles and teeth of the lower jaw.

The *motor externus oculi*, or *sixth pair*, arises from the corpus pyramidale by two roots, and passing forward through the cavernous sinus, it enters the orbit through the sphenoidal foramen, and is distributed to the abductor oeculi muscle.

The *seventh pair* includes the *facial* and *auditory* nerves, and arises from the corpus restiforme and calamus scriptorius. Both branches enter the internal meatus. The facial, which is likewise called *portia dura*, passes out through the stylo-mastoid foramen, and penetrating the parotid gland, is distributed by numerous branches to the face. The auditory is also called the *portio mollis*. It is distributed to the internal ear.

The *eighth pair* includes the glosso-pharyngeal, the pneumo-gastric, and the spinal accessory. It arises by filaments from the corpus olivare, medulla oblongata, and the medulla spinalis. The *glosso-pharyngeal* passes through the posterior foramen lacerum, and is distributed to the side and root of the tongue, and to the tonsils and pharynx. The *pneumo-gastric* also passes out through the posterior foramen lacerum, and descending the neck, included in the sheath with the vessels, enters the thorax and is distributed to the lungs and stomach. The spinal accessory also emerges from the posterior foramen lacerum, and is distributed to the muscles and integuments of the neck.

The *hypo-glossal* nerve, or *ninth pair*, arises by several fasciculi from the medulla oblongata, and passing through the posterior condyloid foramen of the os occipitus, is distributed to the muscles of the tongue.

The Spinal Nerves.

The nerves arising from the spinal cord are divided into the cervical, dorsal, lumbar, and sacral. As mentioned in the account of the spinal cord, they arise by two roots, one coming from the anterior portion of the cord, the other from the posterior portion—the anterior is the motor root, the posterior the sensitive root. After the union of the roots in the intervertebral foramen, the spinal nerves divide into two trunks, the *posterior* of which are much the smaller and go to the muscles of the back; the *anterior* are large, and uniting with the ganglions of the sympathetic, form plexuses, from which the principal nerves of the muscles of the trunk and extremities are derived.

Cervical Nerves.

The first nerve given off from the medulla spinalis, is called the *sub-occipital;* it passes out between the occiput and atlas; its anterior fasciculus is the smaller, and following the course of the vertebral arteries, is partly distributed to the muscles on the front of the vertebræ, and partly joins the pneumogastric and hypoglossal nerves, and the cervical ganglion of the sympathetic; its posterior fasciculus is distributed to the muscles on the back of the neck. The next seven are the cervical nerves proper, of which the three superior anastomose freely with each other, and form a *cervical plexus* at the side of the neck, from which numerous branches are sent to the muscles and skin of the neck. The *phrenic* nerve, also, arises from this plexus, and passing down through the anterior mediastinum, divides into several branches, and is distributed to the diaphragm.

The four inferior cervical nerves and the first dorsal, after sending off filaments to the sympathetic, unite to form in the axilla the *brachial plexus.* From this plexus the following branches are given off which supply the shoulder, axilla, and upper extremity. The *scapular* branch goes backwards, passing through the coracoid notch, and supplies the muscles of the shoulder and scapula. It is quite small.

The *subcapular* and *thoracic* branches, generally five or six in number, supply the muscles of the parietes of the thorax and those under the shoulder.

The *circumflex,* or *axillary* branch, winds around the humerus in company with the posterior axillary artery, and is distributed to the deltoid muscle. The *internal cutaneous* and the *external musculo-cutaneous* are two small branches, which pass down the arm, and are distributed to the muscles and integuments of the fore-arm.

The *radial nerve,* also called musculo-spiral, winds around the humerus, passing between the heads of the triceps muscle, which it supplies with branches, and then descends to the fore-arm and is spent upon its muscles, and upon the wrist and

thumb. The *radial* nerve also descends to the fore-arm, passing under the internal condyle, and is distributed to the integuments on the ulnar side of the back of the hand, the little finger and the ulnar side of the ring finger. The *median* nerve is the largest of the branches given off by the brachial plexus; it descends the arm at the inner edge of the biceps muscle, along with the brachial artery; on reaching the elbow it passes between the heads of the pronator teres muscle, and descending the fore-arm between the flexor sublimus and profundus muscles, giving off branches in its course, is finally distributed to the thumb, and to the fore, middle, and one side of the ring finger.

Dorsal or Thoracic Nerves.

There are twelve pairs of these; the first pair passing out through the intervertebral foramen between the first and the second dorsal vertebræ, and the twelfth between the last dorsal and first lumbar vertebra. The posterior branches go backwards between the transverse processes of the vertebræ, and are distributed to the muscles on the back of the thorax and those lying along the spine. The anterior branches which are the larger, pass along the intercostal grooves, and are distributed to the muscles of the thorax.

The first dorsal nerve sends a branch to the axillary plexus. The second and third send branches, called *intercostal humeral*, to be distributed upon the integuments of the arm.

Lumbar Nerves.

Of these there are five on each side; the posterior branches are small, and go to supply the muscles of the loins; the anterior branches unite to form the *lumbar plexus*, which is placed between the psoas magnus and quadratus lumborum muscles. From this plexus a number of branches are given off: two or three of these are quite small, and go to the muscles of the abdomen. The *external spermatic* branch goes to the groin, and supplies the glands and the cremaster muscle. The *external cutaneous* goes to the commencement of Poupart's ligament, at

the commencement of which it emerges from the abdomen, and is distributed to the integuments and muscles on the inside of the thigh.

The *anterior crural* is the largest branch arising from the lumbar plexus; it passes out of the abdomen under Poupart's ligament, at the outside of the femoral artery. Just above this ligament several branches are given off which are distributed to the muscles and integuments of the pelvis and thigh. Three of these branches are called the *anterior, middle,* and *internal cutaneous* nerves, and are distributed to the integuments. The *saphenus* nerve is a branch of the anterior crural, that accompanies the femoral artery till the latter perforates the adductor tendon, after which it accompanies the saphena vein to the foot, giving off in its course branches to the integuments of the inner side of the leg, and to the upper and inner parts of the foot.

The *obturator* branch accompanies the obturator artery, and passing out at the obturator foramen, is distributed to the adductor and obturator muscles.

Sacral Nerves.

There are generally five pairs of sacral nerves, sometimes however there are six. Their anterior fasciculi unite with a part of the last dorsal, to form the *sacral* or *sciatic plexus,* which is situated at the side of the rectum, in front of the pyriformis muscle.

A number of branches are given off from the plexus, of which a few small ones go to the viscera and muscles within the pelvis. There are also given off the *two glutei* nerves which pass out at the sciatic notch, and are distributed to the glutei muscles; the *inferior long pudendal,* which winds around the tuberosity of the ischium, and is distributed to the integuments of the perineum; the *posterior cutaneous,* which is distributed to the integuments on the back of the thigh and leg; and the *superior long pudental* or *internal pudic,* which accompanies the internal pudic artery, and supplies the organs of generation and the perineum.

The *great sciatic*, or *ischiatic* nerve, also arises from the sacral plexus. It is much the largest nerve in the body, and passing out from the pelvis under the pyriformis muscle, it descends the back part of the thigh about half way to the knee, and then divides into two large branches, called *peroneal* and *popliteal*. In its course the sciatic gives off several branches to the integuments and muscles of the upper part of the thigh.

The *popliteal* nerve continues straight down to the middle and posterior part of the knee joint, and at the head of the tibia, divides into the *external peroneal* and the *anterior tibial*, the first of which descends upon the fibular side of the leg to the foot and ankle, and the last passes down in front of the interosseous ligament, and is distributed to the muscles upon the foot. The *posterior tibial* nerve is a continuation of the popliteal, and descending the back part of the leg along with the posterior tibial artery to the sole of the foot, divides into the *external* and *internal* plantar nerves which supply the sole. The *external saphenus* is also a branch of the popliteal, near the ankle it becomes superficial, and is distributed to the external ankle and foot.

The Sympathetic Nerve.

The sympathic nerve consists of two series or chains of ganglia placed on either side of the lateral part of the bodies of the vertebræ, and extending from the base of the cranium to the coccyx. With the exception of the neck, there is a ganglion for each intervertebral space; the ganglia are united to each other by nervous cords, and send off numerous filaments to the adjacent organs. Each ganglion is considered as a distinct nervous centre. This nerve supplies all the internal organs, and by means of plexuses is connected and distributed with all the other nerves of the body. Besides the ganglia situated along the spine, there are others placed about some of the large vessels of the abdomen, and also in other parts of the body.

In the cranium are five ganglia belonging to the sympathetic, viz. the *ganglion of Ribes*, situated upon the anterior communi-

cating artery, and connected with the *carotid plexus* by means of a filament of the sixth nerve. The carotid plexus surrounds the carotid artery in the carotid canal, and is joined by the deep petrous branch of the vidian nerve;—the *lenticular ganglion*, situated between the optic nerve and the external rectus muscle, and communicating with the nasal nerve, a branch of the third pair, and with the carotid plexus;—the *spheno-palatine* or *Meckel's ganglion*, which gives off the vidian nerve, the deep petrous portion of which, as mentioned, joins the carotid plexus, and the superficial petrous joins the submaxillary ganglion; this ganglion also communicates with the superior maxillary nerve, and from it the palate, gums, and fauces, are supplied. A small oval ganglion, called the otic ganglion, is attached to the inner surface of the inferior maxillary nerve below the foramen ovale, from which communicating branches go to the superior and inferior maxillary, and to the vidian and tympanitic nerves, and which also supplies the tensor tympani, and the tensor palati muscles. A ganglion, called the ganglion of *Laumonier*, is also frequently found in the carotid plexus.

In the neck are three ganglia, called the *superior*, *middle*, and *inferior cervical*. The first is long and spindle shaped; it is situated along the sides of the third and fourth cervical vertebræ, behind the sheath of the vessels of the neck. Its branches are numerous, and communicate with the first, second, and third cervical nerves, with the carotid plexus and the second cervical ganglion, with the facial eighth and ninth pair, and the pharyngeal plexus, and with the cardiac ganglion, by means of the superior cardiac nerve.

The *middle cervical ganglion* is smaller and more flattened than the preceding; it is placed in front of the fifth or sixth cervical vertebra. In some instances it is wanting. It has, also, numerous connections; its branches join the anterior fasciculi of the third, fourth, and fifth cervical nerves, and also the superior and inferior cervical ganglia and the middle cardiac plexus.

The *inferior cervical ganglion* is placed near the head of the

first rib and varies in form and size; it is mostly larger than the last. Like the two last, it also gives off numerous filaments; it is connected with the sixth, seventh, and eighth nerve, and from it proceeds the *inferior cardiac* nerve, which joins the middle cardiac nerve and the cardiac plexus.

The *cardiac plexus* is situated beneath the arch of the aorta. It is formed almost entirely by branches from the three cervical ganglia, the most of them coming from the middle one, or the middle cardiac nerve. It is a single plexus, formed by the nerves from both sides of the neck. Filaments from the *par vagum* and the *descendens noni* nerves are also blended with it. From this plexus the heart is supplied with nerves.

In the *thorax* are *twelve ganglia*, which are situated at the commencement of each intercostal space near the heads of the ribs. They are smaller than the cervical ganglia, and are connected with each other, and also with the anterior fascieuli of the spinal nerves.

The *great splanchnic nerve* is formed by filaments derived from the sixth to the tenth ganglion; it descends through the posterior mediastinum, and penetrating the diaphragm along with the aorta, forms on each side of the aorta a large ganglion composed of a number of smaller ones, called the *semilunar ganglions.*

The *small splanchnic nerve* is derived from the tenth and eleventh thoracic ganglia, after passing through the diaphragm, it joins the semilunar ganglion and the renal plexus.

The *solar plexus* is a network of nerves situated on the sides of the aorta, and extending downwards as far as the renal arteries. It is composed of the several filaments connecting the semilunar ganglion. From it proceed a number of smaller ganglia, which accompany the several arteries. The *diaphragmatic plexus* accompanies the phrenic arteries; the *superior coronary plexus* accompanies the corresponding artery to the stomach; the *splenic plexus* accompanies the splenic artery to the spleen, &c. The superior and inferior mesenteric, the renal plexuses, &c., are distributed in the same manner.

Along the sides of the lumbar vertebræ are placed the *lumbar ganglia*, generally five in number. They are also united to each other, and to the spinal nerves.

The *sacral ganglia*, mostly three in number, are situated on the anterior face of the sacrum. The lumbar and sacral ganglia unite with branches from the lumbar and aortic plexuses, and form the *hypogastric plexus*, from which all the pelvic viscera are supplied.

Physiology of the Nervous System.

The cerebrum.—In the cerebral hemispheres, the highest and most important of the functions of the animal economy—those of the *mind*—are seated. In them the faculty of attention, or the power of directing the mind to impressions made on the senses, resides. The cineritious or gray matter which is found in the convolutions on the periphery of the cerebrum, is the portion which possesses these elevated functions. This gray matter, wherever found, whether in the brain and spinal marrow, or in the ganglions along the course of the nerves, is considered as a nervous centre, or the generator of nervous influence, while the white or medullary matter carries this influence to the different parts of the body.

The more numerous and complex the convolutions in general, the greater the degree of intelligence.

In infants they are imperfectly developed, and their increase is proportionate to the mental improvement; if their growth be arrested by any cause, the mental powers are feeble. Idiots, besides having small brains, have but a limited development of the convolutions. The arrangement of the brain into convolutions admits of a large surface of cineritious matter in a small space. It also allows of a more ready access to the blood-vessels on the one side, and a more free communication on the other, with the fibres by which its influence is distributed. The entire surface of a human cerebrum of average size, when the convolutions are unfolded, has been estimated to be equal to about 670 square inches.

The hemispheres possess but little or no sensibility, they may be wounded, and partially or entirely removed, without giving rise to pain; when severely injured, however, a state of stupor, attended by general functional derangement, mostly results. Instances have occurred in which portions of the cerebrum have been removed without destroying life or impairing the intellect.

The cerebellum.—With respect to the functions of this portion of the brain there is much diversity of opinion; the majority of observers, however, agree in regarding it as the seat of the animal or lower propensities. It is urged in support of this view, that in individuals who have given free indulgence to their passions, the relative size of this organ is much increased.

On the other hand, some contend that is has but little or nothing to do with these propensities, but that its function is to regulate and harmonize the muscular movements, especially those of a voluntary character. Like the cerebrum, the cerebellum is void of sensibility.

The *medulla oblongata.*—Placed intermediate between the brain and spinal marrow, the medulla oblongata serves as a medium through which they act on each other. The corpora pyramidalia, or anterior pyramids, connect the motor fibres of the cerebrum with the anterior lateral columns of the spinal cord; near the lower extremity of the medulla oblongata, these fibres decussate, or cross from side to side, a large portion of those, coming from the right side of the cerebrum, passing over to the left side of the cord, and *vice versa.* Hence the frequent occurrence of paralytic affections on the side of the body opposite to that affected in the brain. It is also alleged that, besides being the point at which sensation terminates and excitement to motion begins, the medulla oblongata possesses the power of originating motion in itself, independent of the cerebrum, and that it presides, especially, over respiration and deglutition.

The *medulla spinalis.*—The functions of the spinal cord are to convey nervous influence to and from the brain, and also to originate nervous influence independently of the brain. All the nerves of the body are united into one common trunk in the

white or medullary matter of the cord; though each filament of every nerve runs a separate and distinct course from its starting point to its termination. Hence the brain influences not only the nerves at the base of the cranium, but all the spinal nerves through the medium of the spinal cord. As previously mentioned, the spinal nerves arise by two roots from the anterior and posterior columns of the spinal cord; a part of the fibres of the posterior root, which is distinguished by having a ganglion on it, pass on to the brain conveying impressions to this organ; and part terminate in the gray matter of the spinal cord, conveying impressions to it. This root is called the *sensory* root; it is also the *afferent* root. The anterior is the *efferent* or *motor* root; part of its fibres come from the brain, conveying *voluntary* motion, and part of them originate in the gray matter of the spinal marrow. To these fibres of both roots, which appear to act independent of the brain, constituting with the gray matter of the spinal cord a distinct nervous centre, the term *reflex system* has been applied.

Thus it will be seen that each nerve has four sets of fibres: one set, called *sensory*, passing upwards to the brain, conveying sensations to that organ; a second set, called motor, conveying the influence of volition and emotion *from* the brain; a third set, called *excitor*, terminating in the spinal cord and conveying impressions to it; and a fourth set also of *motor* fibres, conveying the motor influence from the spinal marrow to the muscles.

In the *reflex system*, or that of which the spinal cord is the centre, it will be understood that the cord has the power of reflecting the action of the sensitive upon the motor nerves, without itself possessing *sensation*, that being a faculty which belongs exclusively to the brain.

The *sympathetic nerve*.—This nerve is both motor and sensory; it exercises a controlling influence over the involuntary functions, and being connected also with the cerebro-spinal system, it brings the organic functions in relation to the animal.

Sensation.

Sensation is defined to be "the perception of an impression;" it is to the brain alone that this faculty belongs, hence the term *sensorium* is often applied to this organ. There are two kinds of sensations, one internal, the other external; the first arise from impressions made within the body, as the sensations of hunger or thirst, or such as arise from some temporary want of the system; the second are those which arise from impressions made on the external surface of the body, as the sense of touch or sight. Sensation occurs in the brain, and not in the part impressed.

Sensations are likewise divided into *general* and *special*. By general sensation, which is distributed all over the body, we feel those impressions made by surrounding objects, which produce the various modifications of pain and pleasure, variations of temperature, and the sense of contact and resistance. By special sensation is understood that which arises from impressions of a peculiar character upon nerves which are adapted to receive them alone. Each nerve of special sensation requires its own peculiar stimulus to call it into action, and is consequently incapable of taking part in the action of another. Thus light is required for the eye, sound for the ear, &c. Nerves of *special* sensation have no general sensibility, they may be wounded without causing the individual any pain.

There are five special senses, viz. touch, taste, smell, hearing, and seeing.

Sense of Touch.

This sense enables us to become acquainted with the hardness or softness, the roughness or smoothness, shape, size, and weight of a body. The idea of *resistance* would seem to be the only idea conveyed to the mind by the sense of touch, as by it these properties of bodies are made known. The sense of touch is more highly developed in the lips, tip of the tongue, and the palmar surface of the extremities of the fingers, these parts being

abundantly supplied with nerves of general sensation, than in other parts of the body; it is also more generally distributed throughout the animal kingdom than any of the other senses. The nerves of touch are the posterior roots of the spinal nerves, and portions of the fifth and eighth pairs of cranial nerves; these are also the nerves of *general sensation;* they are distributed to the papillæ of the skin, and covered by the epidermis to protect them from too violent external impressions from external bodies. All bodies to be cognizable to the sense of touch, must be brought into contact with the sensory surface; the only exception to this rule is with respect to the sense of temperature, for which, in the opinion of some physiologists, there is a special set of nerves.

Sense of Taste.

The mucous membrane of the tongue and fauces is the organ of taste, the anatomical character of which has been previously described.

As in the sense of touch, so in that of taste, the substances to be examined must be brought in contact with the organ. When substances having a strong savour are brought in contact with the tongue, the papillæ become erect and turgid, giving to the surface of the organ a decided roughness. For the exercise of this function it is necessary that the substance to be tasted should be soluble; otherwise the feeling of contact merely is excited. Impressions of taste remain longer than those of the other senses; though the after-taste may be different from the original.

There is no special nerve of taste; the tongue being supplied by the fifth and eighth pairs, which would seem to convey impressions of taste as well as give to the tongue its general sensibility. The first of these nerves is distributed more to the front, and the second more to the back of the organ; those impressions which produce nausea are conveyed by the latter. The motions of the tongue are performed through the ninth pair, though this nerve has nothing to do with the sense of taste; as

its division causes loss of motion of the organ, without at all impairing the special sense.

Both the senses of touch and taste are deadened by cold air; the latter is also considerably impaired by any injury of the sense of smell.

Sense of Smell, or Olfaction.

The *nose* is the *organ* of smell; it consists of two portions, one external, projecting upon the face, the other an internal cavity. The external portion is formed by the nasal bones, the nasal process of the superior maxillary bones, by five cartilages, and by the integument. The bones have been already described. Two of the cartilages are placed on either side, and one in the middle; the latter constitutes the cartilaginous septum between the nostrils, and is thick, flat, and triangular. The lateral cartilages are also triangular, and articulate above and behind with the bone, in front with the septum, and below with the alar cartilages. The alar cartilages form the lower part of the nose, called the nostrils; they are irregularly semi-eliptical, and keep the nostrils open. The mucous membrane lining the nose is thick, soft, and red; it is termed pituitary or Schneiderian, and is continuous with the mucous membrane of the mouth, Eustachian tube, lachrymal canal, and frontal sinus. The hairs situated at the entrance of the nose are called *vibrissæ*.

By the sense of smell we are made acquainted with the odorous particles of bodies suspended or dissolved in the atmosphere. Being seated in the nose, at the entrance of the respiratory passages, it serves as a protection against the introduction of injurious matters. Another use of this sense, and the principal one, is to aid the impression of taste in conveying intelligence of the properties of food. The sense of smell is limited to that portion of the mucous or Schneiderian membrane of the nostrils which covers the *superior* and part of the middle turbinated bones, the *olfactory* nerve being distributed only to this portion. Hence this region is called the olfactory region. The advantage of having the sense situated high up in the nostril,

is to protect it from mechanical injury, and also from the contact of too cold or too dry air, both of which impair it very materially. Odorous particles are brought in contact with the Schneiderian membrane by the act of inspiration, and are so minute that they can not be detected by the most delicate experiments. The fifth pair of nerves give to the mucous membrane of the nose its general sensibility.

The sense of smell, like that of taste, is not an intellectual one; it is however, susceptible of cultivation; individuals by it are frequently capable of recognizing others. It is usually much more acute in the lower orders of animals than in man.

Sense of Hearing, or Audition.

The *ear* is the organ of *hearing*. It consists of three parts; the *external ear*, the *middle ear* or *tympanum*, and the *internal ear*. The external is composed of the *pinna*, which is the movable part on the side of the head, and the meatus, or canal, a passage leading from the pinna. The outer rim of the pinna is called the *helix*, within which is a prominence called the *anthelix*. At the upper part this prominence divides, leaving a space termed the scaphoid fossa. The deep, central cup within the anthelix, is the *concha*. A small eminence, situated at the end of the helix, and in front of the concha, and containing a small tuft of hair, is the tragus—so named from its resemblance to a goat's beard. Opposite to this eminence, and below the concha, is the *antitragus*. The pendulous portion is the lobe; it consists of cellular and adipose tissue. The oval, elastic plate of fibro-cartilage is attached in front, by the anterior ligament to the zygomatic process, and behind, by the posterior ligament to the mastoid process. Several small muscles enter into the composition of the pinna, but as they are, comparatively, of but little importance, their description may be dispensed with.

The *meatus* is about an inch in length; it is a bony canal lined by cartilage, narrow in the middle, and curved downwards. The skin lining it is studded with hairs, and glands which secrete wax or cerumen.

The *middle ear*, or tympanum, is an irregular cavity situated in the petrous portion of the temporal bone, and filled with air which enters by the Eustachian tube; it contains a chain of small bones, and openings into the mastoid cells. In front it is bounded by the *membrana tympani*, or drum of the ear.

The *membrana tympani*, or drum, is a thin, transparent, oval membrane which separates the external ear from the cavity of the tympanum. It is placed obliquely across this cavity, and is slightly convex internally, and concave externally. It consists of three lamina; the external is continuous with the cuticle, the internal with the mucous membrane lining the cavity, while the middle is strong and fibrous, and attached by its circumference to the bone.

The middle ear has two orifices communicating with it; one, the *fenestra ovalis*, leading to the vestibule; the other, the *fenestra rotunda*, opening into the cochlea; both of these, however, are closed by membranes to prevent the escape of fluid contained in the inner chambers. The Eustachian tube is a straight canal, about two inches in length, which empties into the pharynx; its commencement is bony, and its termination cartilaginous.

The bones of the tympanum are four in number, viz. the *malleus*, or hammer, which is imbedded in the tympanum; the *incus*, or anvil, somewhat resembling a molar tooth; the *orbiculare;* and the *stapes* or stirrup. These bones articulate with each other in the order named, and are also connected by three small muscles, called the *tensor* and *laxators tympani*, and the stapedius. The contractions and relaxations of these muscles move the bones, and relax or make tense the tympanum.

The *internal ear*, or *labyrinth*, is composed of three parts, viz. the *vestibule*, the *semicircular canals*, and the *cochlea*.

The *vestibule* is a small triangular cavity situated within the wall of the tympanum; into it behind, the semicircular canals open by five orifices, and in front the cochlea by a single one. The fenestra ovalis is on its outer wall, and on its inner are

several small holes for the passage of a portion of the auditory nerve. The aqueduct of the vestibule also opens into it.

The *semicircular canals* are three bony passages, the extremities of which open into the vestibule by five orifices. Two of these canals are vertical, and one horizontal.

The *cochlea* resembles a snail shell, and forms the anterior portion of the labyrinth; it consists of a bony and gradually tapering canal about an inch and a half in length, which makes two turns and a half spirally around an axis called the *modiolus*. The canal of the cochlea is divided into two passages by a bony and membranous plate, called the lamina spiralis; these passages communicate with each other at the apex of the cochlea. The *aqueduct* of the cochlea opens by one extremity into the upper part of the canal, and by the other upon the inferior surface of the petrous bone.

The *membranous labyrinth* has the same form as the bony vestibule, cochlea, and semicircular canals, which cavities it lines; it consists of several layers, and contains a limpid fluid called after Cotonius.

The auditory nerve divides in the internal meatus into two branches, which ramify through the membranous labyrinth and terminate on the inner surface of the membrane.

The *sense of hearing* is that function by which the mind takes cognizance of the vibratory motions of bodies which give rise to the phenomena of sound. These vibrations may be communicated to the ear through the air, or through the intervention of some solid substance brought into contact with the organ of hearing.

The precise function of all the parts of the ear is not known.

The function of the *external ear* is to collect and concentrate sonorous vibrations or sounds, and conduct them inwards.

The use of the *membrana tympani* is to receive the sounds and transmit them to the chain of bones, and also to modify their intensity. It is not, however, essential to hearing as it may be perforated or destroyed without very materially impairing the sense.

The *chain of bones* serves to conduct the sounds across the cavity of the tympanum to the internal ear.

The *tympanum* isolates the chain of bones, and allows free vibration to the membranes at each end of it. The use of the *Eustachian tube* is to admit air into the cavity of the tympanum, which prevents undue tension of the membrane, by rendering the pressure on both sides equal; and to carry off the secretions of the middle ear which it discharges into the throat.

In regard to the functions of the *internal ear*, or *labyrinth*, but little is known; in it the sounds reach the auditory nerve, and are thus transmitted to the brain.

The idea of the *distance* and *direction* of sounds is mostly acquired by habit. The *acuteness* of hearing varies very much in different individuals, and may be much increased by cultivation.

Sense of Vision.

By this sense we are enabled to perceive the form, size, color, position, &c., of the bodies which surround us. The medium through the agency of which this is accomplished, is called *light*. The eye is the organ of sight.

The *globe*, or ball of the eye, is a spherical body about an inch in diameter, from before backwards and somewhat less transversely. It is surrounded by a fibrous membrane continuous with the sheath of the optic nerve behind.

The *sclerotic coat* is a dense, white, fibrous membrane, which invests about four-fifths of the eye, giving to it its form, and serving for the attachment of the muscles. Behind it is perforated by the optic nerve. In front it receives the cornea by a circular, bevelled edge.

The *cornea* is the transparent, projecting portion which fills up the circular opening in the anterior part of the sclerotica; it constitutes about one-fifth of the eye-ball, and is composed of several lamina, or layers.

The *choroid coat* is a thin vascular membrane which lines the sclerotica, and is of precisely the same extent as that tunic.

It consists of three layers, and is filled with black coloring matter called pigmentum nigrum.

The *ciliary processes* are situated at the anterior portion of the choroid coat surrounding the lens. They consist of seventy or eighty short triangular folds.

The *iris* is a thin circular membrane, varying in color in different persons, hence its name, forming a vertical septum, or partition, between the anterior and posterior chambers of the eye. In its centre is an opening, called the pupil. Its posterior surface is in contact with the ciliary processes, and thickly coated with pigmentum nigrum. Its external border is attached to the ciliary ligament at the base of the ciliary processes.

The *retina* is a soft white membrane, situated within the choroid coat; it extends from the optic nerve behind to terminate in an irregular edge around the centre of the cilia in front. Internally it is in contact with the vitreous humor. It is a nervous structure, and generally considered as an expansion of the optic nerve. This nerve enters the ball of the eye on the inner side of its axis; and through it the central artery of the retina enters, and after passing through the vitreous humor, is distributed to the retina and lens. The point where the optic nerve is connected with the retina is incapable of vision. Immediately at this point, also, there exists upon the retina a yellow spot, called after *Sœmmering*.

A thin membrane between the choroid coat and the retina, is the *membrana Jacobi*.

The *aqueous humor* is a transparent, albuminous fluid, filling the chambers of the eye. The anterior chamber is the space between the cornea in front, and the iris and pupil behind; the posterior chamber is between the iris and pupil in front, and the crystalline lens and ciliary processes behind. Both chambers are lined by a delicate membrane which secretes the aqueous humor. If the aqueous humor is by accident discharged, it will be replaced again without loss of sight.

The *crystaline lens* is placed immediately behind the pupil, and is surrounded by the ciliary processes; it is a double convex

lens, with the posterior surface more convex than the anterior. It is soft and transparent, and composed of concentric laminæ or layers which increase in hardness as they approach the centre. The lens is invested by a transparent membrane, called its capsule. In childhood it is spherical, and in old age it is flattened.

The *vitreous humor* is more dense than the aqueous, being of a jelly-like consistence. It is transparent and globular in form, constituting the principal bulk of the eye. It is held in cells formed by a delicate membrane, called the hyaloid. If the vitreous humor is let out, it cannot be restored, and the eye is entirely destroyed.

Fig. 30.

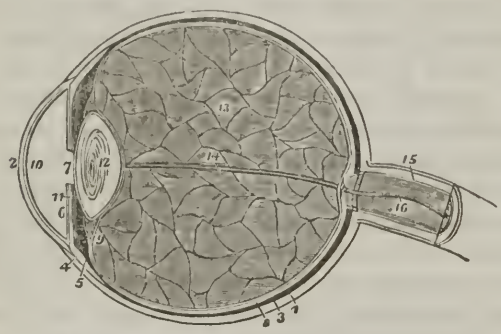


Fig. 30. An antero-posterior vertical section of the eye. 1 The sclerotic coat; 2 the cornea; 3 the choroid coat; 4, 5 the ciliary body and processes; 6 the iris; 7 the pupil; 8 the retina; 10 anterior chamber; 11 posterior chamber; 12 crystalline lens; 13, 14 vitreous humor; 15 central artery of the retina; 16 optic nerve.

The *eyebrows* are elevations of integument, covered with stiff short hairs: they protect the eye from too vivid light and from the perspiration that accumulates on the forehead.

The *eyelids* or *palpebræ*, are composed of skin, muscular fibres, and cartilage; the latter, called *tarsal cartilages*, are small and crescentic in shape, and placed in the edges of the lids; they serve to preserve the shape of the lid. When the lids are in contact, they have a triangular canal between them.

The *cilia* or *eyelashes* are short, curved hairs placed in the margins of the lids to protect the eyeball. A mucous membrane, called the *conjunctiva*, lines the lids, and also extends over the anterior surface of the ball.

The *Meibomian glands* are small bodies, twenty or thirty in number, placed between the conjunctiva and the inner surface of the lids. They discharge a viscid fluid by numerous orifice along the edges of the lids, and their secretion prevents the overflow of tears at night.

A small red elevation in the internal angle of the eye, about the size of a grain of barley, is the *caruncula lachrymalis*. It consists of a number of small glands.

The *lachrymal gland* is situated at the upper and outer portion of the orbit; it is of a light pink color, and about the size of a filbert. It secretes the tears, which are discharged through ten or twelve ducts opening along the edge of the upper lid. By this secretion the eye is constantly kept moist.

The *lachrymal canals*, one for each lid, commence by a very minute orifice, called *puncta lachrymalia*, near the inner angle of the eye. They conduct the tears into the lachrymal sac. The *lachrymal sac* is the enlarged upper extremity of the *nasal duct*. This latter is a canal, about three-fourths of an inch in length, passing downwards and backwards from the inner angle of the eye through the bones of the face to the inferior meatus of the nose. It carries off the tears.

The movements of the eye are performed by six muscles, which arise from the walls of the orbit, and are inserted into the sclerotic coat. Four of them are straight, and are called the *superior*, *inferior*, *internal*, and *external:* and two are *oblique* —a superior and inferior. The *superior oblique* muscle plays over a tendinous pully attached to the upper margin of the orbit.

In order to comprehend fully the functions of the different parts of the eye, a knowledge of the laws of light and optics is necessary, for which the reader is referred to the works of natural philosophy, as these subjects belong rather to natural philosophy than to physiology.

The use of the sclerotic coat is to give form to the body of the eye, and also to protect the inner and more delicate parts.

The *choroid coat* serves chiefly to transmit the nerves and blood-vessels.

The *pigmentum nigrum* on the inner surface of the choroid coat absorbs the rays of light after they have made their impressions on the retina.

The use of the iris is to regulate the quantity of light admitted through the pupil, which it is enabled to do by its power of contraction and expansion.

The *aqueous humor*, *crystalline lens*, and *vitreous* humor, are transparent media through which the rays of light pass to reach the retina; their office is to refract rays of light so that they will fall upon the retina in the most favorable manner; the most of the refracting power is possessed by the lens.

The use of the retina is to receive the impressions of light, and transmit them to the brain.

In near-sighted persons the refracting power of the eye is too great, the rays of light being brought to a focus before reaching the retina. This defect is remedied by the use of a double concave lens. In far-sighted persons, on the contrary, there is not sufficient refractive power, and the focus is formed behind the retina. To obviate this defect, convex lenses should be used to concentrate the rays. The former defect, that of near-sightedness or *myopia* commonly occurs in young persons, and is often corrected by age; the latter, far-sightedness or *presbyopia*, is most frequently met with in persons somewhat advanced in years.

The fifth pair of nerves furnishes the eye with general sensibility; the optic nerve being a nerve of special sensibility only.

INDEX OF DISEASES.

A.

Abdomen, congestion of blood to the . . . . page 91
Abdominal dropsy . . . 111
Abortion, see Miscarriage . 244
Abscess 42
Accouchement 43
Administration of medicines . 39
After-Pains 44
Ague, see Intermittent fever . 135
Aliment, forbidden . . . 37
Amenorrhœa 45
Anasarca 110
Anger 48
combined with fright . 49
Anus, itching of the . . 50
Aphthæ 52
Apoplexy 55
Apparent death from drowning 116
from the vapor of coal . 55
of new-born children . 53
Appetite, loss of, see Stomach, disordered 212
Arsenic, poisoning by . . 56
Ascarides, see Itching of the anus 50
Ascites 111
Asiatic Cholera . . . 86
Asphyxia 53
Asthma 58

B.

Baby's, sore mouth . . . 52
Backache, see Loins, pain in the 178
Bed-Sores 207
Bilious fever 137
Birth, see Accouchement . 43
premature, see Miscarriage 244
Bleeding at the nose . . 62
of the gums, see Scurvy of the mouth . . . 185
Blood, spitting of . . . 63
vomiting of . . . 64
Bloody urine 65
Boil 66
Bowels, inflammation of the . 76
Brain, inflammation of the, page 67
Breasts, gathered . . . 68
Breath, offensive . . . 188
shortness of, see Asthma . 58
Bruises 71
Bulimy 155
Burns 73

C.

Canker of the mouth . . 185
Cankrum oris 185
Cardialgia 242
Catarrh 77, 87
Catarrh fever 79
Catarrhal inflammation of the eyes 124
Cephalalgia 155
Cheeks, swelling of the . . 79
Chest, concussion of the . . 241
congestion of blood to the 90
dropsy of the . . . 112
Chicken-Pox 81
Chilblains, see Frost-Bite . 142
Childbed 81
fever 192
Childbirth 43
Children learning to walk . 233
overfeeding of . . . 230
teething 221
Chills and fever . . . 135
Chlorosis 152
Cholera Asiatica . . . 86
infantum 82
morbus 85
Cholerine 82
Cold in the head . . . 87
Colic 94
from cold 94
from flatulence . . . 95
from hæmorrhoids . . 96
from menstruation . 97, 114
from overloading the stomach 95
from suppressed perspiration 94
from unwholesome food . 95
from wet feet . . . 94
from worms 95

Concussion of the chest . page 241
Confinement, duration of . 81
Congestion of blood to the abdomen 91
of blood to the chest . 90
of blood to the head . 88
Constipation 92
Convulsions 208
epileptic 120
Corns 94, 234
Cough 100
hooping 159
Coup de soleil 219
Cramps of the stomach . . 215
Croup 98
Crusta lactea, see Scabs on the face of children . . . 184
Crying of infants . . . 102

D.

Delirium tremens . . . 102
Depraved stomach, see Stomach disordered 212
Diarrhœa 104
from anger . . . 107
from disordered stomach . 108
from fright . . . 107
from taking cold . . 107
from vexation . . . 109
Directions for patients to describe their disease in writing 251
Disappointed love . . . 154
Discharge from the ears . . 118
Disordered Stomach . . 212
Distress, see Grief . . . 154
Dropsy 110
abdominal . . . 111
general 110
of the chest . . . 112
of the peritoneum . . 111
Drowning, apparent death from 116
Drunkenness 102
Duration of Confinement . 81
of the effect of medicines 246
Dysentery 113
Dysmenorrhœa 114
Dyspepsia, see Disordered and Weak stomach . . . 212

E.

Earache 117
Ears, discharge from the . . 118
inflammation of the . . 119
Epilepsy 120
Epileptic convulsions . . 120
Eruptions in general . page 128
Erysipelas 120
Erysipelatous inflammation of the breasts 70
Excoriations 129
Exertion, inordinate, see Fatigue 133
Eyes, inflammation of the . 121
from a stye . . . 123
from catarrh . . . 124
from difficult teething . 122
from the presence of foreign bodies . . . 123
in new-born infants . . 121

F.

Face, scabs of, in children . 129
Facial neuralgia . . . 130
Fainting 132
Falling of the womb . . 236
Fatigue 133
Feet, injuries of the . . 134
sores on the, see Ulcers . 226
sweating of the . . 135
Felon 140
Fever, bilious 137
catarrh 79
childbed 192
gastric 137
intermittent . . . 135
milk 183
miliary 138
puerperal 192
scarlet 198
Film, or specks on the eye . 128
Fire, St. Anthony's . . . 120
Fits, see Spasms . . . 208
Flatulency 141
Forbidden, aliment . . . 37
Fright 141
Frost-Bite 142
Furunculus 66

G.

Gastric fever 137
Gathered breasts . . . 68
General dropsy . . . 110
Giddiness, see Congestion of blood to the head and headache 88
Glands, swelling of . . . 144
Goitre 151
Gout 145
Greediness 155
Green sickness . . . 152

Grief . . . . page 154
Grippe, or Influenza . . 153

H.

Hæmatamesis 64
Hæmorrhage 163
uterine 165
Hæmorrhoidal colic . . 96
Hæmorrhoids, see Anus, itching of the 50
Head, cold in the . . . 87
Headache 155
from congestion of blood to the head . . . 155
from constipation . . 156
from dissipation . . 156
from irritability of the nervous system . . . 157
from loss of sleep . . 156
from suppressed perspiration 158
from wine-drinking . . 156
hypochondriacal . . 157
Heart, palpitation of the . 158
Heartburn, see Stomach, cramps of the 215
Helminthiasis 237
Hemicrania 182
Hernia, umbilical . . . 186
Herpes circinatus . . . 197
Hiccup 159
Hoarseness, see catarrh . . 77
Home sickness, see Grief . 154
Homœopathy 19
Hooping-Cough . . . 159
Hunger, inordinate, see Greediness 155
Hydrophobia 161
Hydrops 110
Hydrothorax 112

I.

Icterus 169
Incubus 186
Infantile Cholera . . . 82
Infants, crying of . . . 102
Inflammation 167
of the chest . . . 243
of the bowels . . . 76
of the brain . . . 67
of the ear 119
of the eyes . . . 121
of the eyes from a stye . 123
of the eyes from catarrh . 124
of the eyes from difficult teething . . . 122
Inflammation of the eyes from scrofula . . . page 127
of the eyes from the presence of foreign bodies . 123
of the eyes of new-born children . . . 121
of the kidneys . . . 171
of the liver . . . 176
of the lungs . . . 180
of the throat . . . 204
Influenza, see Grippe and Catarrh 77, 153
Injuries from lifting . . 212
of the feet . . . 134
Inordinate Hunger . . . 155
Intermittent fever . . . 135
Introduction 1
Itch 168
Itching of the anus . . . 50
of the skin . . . 201

J.

Jaundice 169

K.

Kidneys, inflammation of the . 171
Knots on the veins . . . 229

L.

Labor, see Accouchement . 43
Lameness, spontaneous . . 173
Leucorrhœa 174
Life of Hahnemann . . 3
Lifting, injuries by . . . 212
Lightning, stroke of . . 176
Liver, Inflammation of the . 176
Loins, pain in the . . . 178
Love, disappointed, see Grief . 154
Lumbago 179
rheumaticus . . . 179
Lungs, inflammation of the . 180

M.

Mania a potu 102
Measles 181
Megrim, see Headache . . 182
Menstrual colic . . 96, 114
Menstruation, irregularities of, see Dysmenorrhœa . 114
painful 114
Mesmerism and magnetism . 262
Milk-Crust 184
fever 183
scab 184

Miliary fever . . . page 138
Miscarriage 244
Mouth, baby's sore, see Aphthæ 52
canker of the . . . 185
scurvy of the . . . 185
sore 52
Mumps, see Ears, inflamed . 119

N.

Navel, rupture of the . . 186
Nephritis 171
Neuralgia fascialis . . . 130
Nettle-Rash, see Fever, miliary 138
Nightmare 186
Nipples, sore, see Gathered breasts 68

O.

Odontalgia 223
Offensive breath . . . 188
Onanism 188
Otalgia 117
Otorrhœa 118
Overfeeding of children, see Vomiting 230

P.

Pain in the loins . . . 178
Painful menstruation . . 114
Palpitation of the Heart . . 158
Panaris 140
Peritoneal dropsy . . . 111
Pleurisy 190
Pleuritis 190
Podagra 145
Poisoning 190
by arsenic . . . 56
Pox, small 203
Preservation of medicines . 245
Prolapsus uteri . . . 236
Psora 168
Puerperal-Fever . . . 192

Q.

Quinsy, see Sore throat . . 204

R.

Rash, see Fever, miliary . . 138
scarlet 199
Regimen of the sick . . 35
Rheumatic lumbago . . 179
Rheumatism 194
Ring-Worm . . . page 197
Rose 120
Rubeola 181
Rupture of the navel . . 186

S.

Scabs on the face in children . 129
Scald-Head 197
Scalds, see Burns . . . 73
Scarlatina 198
Scarlet-Fever 198
rash 199
Sciatic neuralgia . . . 200
Sciatica 200
Scrofula of the eyes . . 127
Scurvy of the mouth . . 185
Self-Pollution 188
Shortness of breath . . 58
Sketch of Hahnemann . . 3
Skin, itching of the . . 201
Sleeplessness 201
Small-Pox 203
Sore mouth 52
nipples, see Gathered breasts 68
throat 204
Sores from lying a bed . . 207
on the feet . . . 226
Sorrow 154
Spasms 208
of the chest . . . 58
Specks, or film on the eye . 128
Spitting of blood . . . 63
Spontaneous lameness . . 173
Sprains 212
St. Anthony's fire . . . 120
Stomach, cramp of the . . 215
disordered . . . 212
Stroke of lightning . . . 176
Stye 123
Summer-Complaint . . . 82
Sun-Stroke 219
Suppression of the menses . 45
Sweating of the feet . . 135
Swelling of the cheeks . . 79
of the glands . . . 144

T.

Tabular index of the remedies used, their English names, antidotes, and diseases in which employed . . . 269
Tape-Worm 219
Teething 221
Thrush 52
Throat, inflammation of the . 204
sore 204

Tinea capitis . . . page 197
Toothache from cold . . 224
from congestion of blood . 224
from decayed teeth . . 223
from increased sensibility of the nervous system . 225

U.

Ulcers on the extremities . 226
Urinary complaints . . . 226
Urine, bloody 65
Uterine Hæmorrhage . . 165
Uterus, prolapsus of . . 236

V.

Vaccination 227
Varicella 81
Varicose veins 229
Variola, see Small-Pox . . 203
Varioloid 229
Veins, knots on the . . . 229
Veins, varicose . . page 229
Vertigo, see Congestion of blood to the head and headache . 88
Vomiting from mental emotions 231
from morbid irritability of the stomach . . . 233
from vitiated stomach . 230
from worms . . . 232
of blood 64

W.

Walk, children learning to . 233
Warts 234
Weaning 235
Wen 236
Whites 174
Whitlow 140
Womb, falling of the . . 236
Worms 237
tape 219
Wounds 239

INDEX OF ANATOMY AND PHYSIOLOGY.

A.

Abductor brevis . . page 376
longus 376
magnus 376
minimi digiti manus . 374
minimi digiti pedis . . 381
pollicis manus . . . 373
pollicis pedis . . 380, 381
Abductors 374
Albumen 287
Anatomy and Physiology . 283
Anconeus 369
Astragalus 335
Azygos uvulæ 383

B.

Biceps flexor cruris . . . 377
flexor cubiti . . . 369
Blood-Vessels 416
Bone 291
Bones of the face . . . 314
of the foot . . . 334
of the fore-arm . . 326
Bones of the hand . . page 327
of the head . . . 309
of the leg 332
of the lower extremities . 331
of the metatarsus . . 336
of the toes . . . 337
of the trunk . . . 299
of the upper extremities . 323
Brachialis internus . . . 369
Branches of the abdominal aorta 421
of the thoracic aorta . 421
Buccinator 353

C.

Calcium, or Lime . . . 290
Carbon 289
Carpus 327
Cartilage 291, 339
Cascine 287
Cellular, or areolar tissue . 293
Cervical nerves . . . 447
vertebræ 300
Cervicalis descendens . . 366
Chlorine 290

Chondrine . . . page 288
Circulatory system . . . 413
Circumflexus 383
Clavicle 384
Coccyx 302
Comparative anatomy . . 283
physiology . . . 283
Complexus 366
Composition of bone . . 298
Constrictor isthmi faucium . 385
Coraco brachialis . . . 369
Corrugator supercilii . . 354
Cranium 309
Cremaster 362
Crureus 375
Cuboid bone 335
Cuneiform 327
Cuticle, or Epidermis . . 347

D.

Deltoid muscle . . . 368
Depressor anguli oris . . 355
labii inferioris . . 355
labii superioris alæque nasi 355
Development of bone . . 297
Diaphragm 362
Digastricus 357
Dorsal, or thoracic nerves . 448
vertebræ 301

E.

Elaine 288
Elasticity of tissues . . 295
Elementary composition of man 286
Ethmoid bone 311
Extensibility of tissues . . 295
Extensor brevis digitorum pedis 380
carpi radialis brevis . . 371
carpi radialis longus . . 371
carpi ulnaris . . . 371
digitorum communis . . 372
longus digitorum pedis . 378
major pollicis manus . 372
minor pollicis manus . 372
ossi metacarpi pollicis manus 372
proprius pollicis pedis . 378
External cuneiform . . . 336

F.

Facial and auditory nerves, or seventh pair . . . 446
angle 322
Fascia superficialis . . . 360
transversalis . . . 362
Fibrine 287
Fibro cartilage . . page 339
Fibula 334
Flexibility of tissues . . 295
Flexor accessorius . . . 380
brevis digitorum pedis . 380
brevis minimi digiti pedis 381
brevis pollicis manus . 373
brevis pollicis pedis . . 381
carpi radialis . . . 370
carpi ulnaris . . . 370
longus digitorum pedis perforans 379
longus pollicis . . . 379
longus pollicis pedis . 371, 380
parvus minimi digiti manus 374
profundus digitorum perforans 371
sublimis digitorum perforatus 371
Follicles 292
Fontanels 320
Formation of callus . . . 299
Frontal bone 309

G.

Ganglions 292
Gastrocnemius 378
Gelatine 288
Gemini 377
General remarks on the head . 319
Genio hyoideus . . . 358
Glands 292
Glosso pharyngeal, pneumogastric, and spinal accessory, or eighth pair of nerves . . 446
Gluteus magnus . . . 376
medius 376
minimus 376
Gracilis 376
Gums 382

H.

Hæmatosine 289
Humerus 325
Hydrogen 289
Hyoid bone 323
Hypo-glossal nerve, or ninth pair 446

I.

Iliacus internus . . . 363
Ilium 304
Indicator 373
Inferior constrictor . . . 385
maxillary 318

Inferior turbinated bone . page 317
Infra spinatus scapula . . 368
Innominatum 304
Intercostales 359
Internal cuneiform . . . 336
Inter-spinales 367
Interosseus muscles . . . 381
Inter-transversalis . . . 367
Intestines 390
Iron 290
Ischium 305

L.

Large intestines . . . 392
Larynx 404
Latissimus dorsi . . . 364
Levator anguli oris . . . 355
costarum 368
labii superioris alæque nasi 355
menti 355
palati 383
scapulæ 364
Ligaments . . . 291, 339
Linea alba 361
Lips 382
Longus colli 358
Lumbar nerves . . . 448
vertebræ 301
Lumbricales 373
pedis 380
Lunaro 327

M.

Magnesium 290
Magnum 328
Malar bones 317
Manganese 290
Margarine 288
Masseter 356
Membrane 292
Metacarpal bones . . . 328
Middle constrictor . . . 385
cuneiform 336
Multifidus spinæ . . . 366
Motor oculi externus, or sixth pair of nerves . . 445
oculi, or third pair of nerves 445
Mouth 382
Muscles 291
of the abdomen . . 360
of the arm . . . 369
of the back . . . 363
of the foot . . . 380
of the fore-arm . . 369
of the hand . . . 373
of the head and neck . 354
Muscles of the leg . . page 378
of the lower extremities . 375
of the pharynx . . . 385
of the shoulder . . . 368
of the soft palate . . 383
of the trunk . . . 359
of the upper extremities . 368
Muscular tissue . . . 294
Mylo-hyoideus . . . 357

N.

Nasal bone 316
cavities 321
Nerves 292
of the cranium . . . 444
Nervous system . . . 438
tissue 294
Nitrogen 289

O.

Obliquus externus . . . 361
inferior 367
internus 361
superior 367
Obturator externus . . . 377
internus 377
Occipital bone 310
Occipito frontalis . . . 354
Œsophagus 385
Of the abdominal viscera . 386
articulations . . 338–345
bones 296
hair 348
muscles 352
nails 348
sebaceous glands . . 347
skin 345
teeth 350
Olfactory nerves, or first pair . 444
Omo-hyoideus 357
Opponens pollicis . . . 373
Optic nerve, or second pair . 445
Orbicularis oris . . . 356
palpebrarum . . . 354
Orbits of the eye . . . 321
Organs of Digestion . . 382
of respiration . . . 404
Os calcis 335
Oxygen 289

P.

Palato 383
bones 316
Palato-pharyngeus . . . 383
Palmaris brevis . . . 373

Parietal bones . . . page 310
Parotid gland 384
Patella 334
Patheticus, or fourth pair of nerves 455
Pectineus 376
Pectoralis major . . . 359
minor 359
Peculiarities of the fœtal circulation 432
Pelvis 304
Periosteum 298
Peritoneum 387
Peroneus brevis . . . 378
longus 378
tertius 378
Phalangeal bones . . . 328
Pharynx and Œsophagus . 384
Phosphorus 289
Physical and vital properties of tissues 294
Physiology of digestion . . 398
of the circulation . . 435
of the nervous system . 453
of the respiration . . 410
Pisiform bone 327
Plantar interossei . . . 381
Plantaris 379
Platisma myoides . . . 356
Popliteus 379
Porosity of tissues . . . 298
Potassium 290
Pronator quadratus . . . 371
radii teres 369
Psoas magnus 363
parvus 363
Pterygoideus externus . . 356
internus 356
Pubis 305
Pyramidalis 362
Pyriformis 377

Q.

Quadratus femoris . . . 377
lumborum 363

R.

Radius 326
Rectus abdominis . . . 361
anticus capitis major . 358
anticus capitis minor . 358
capitis lateralis . . . 368
capitis posticus major . 367
capitis posticus minor . 367
femoris 375
Remarks on the lower extremities 337
Remarks on the upper extremities . . . . page 329
Rhomboideus major . . 364
minor 364
Ribs 307

S.

Sacral nerves 449
Sacro lumbalis and longissimus dorsi 365
Sacrum 302
Salivary glands of the mouth . 384
Sartorius muscle . . . 375
Scalenus anticus . . . 358
posticus 358
Scaphoid 335
Scaphoides 327
Scapula 323
Semi-membranosus . . . 377
spinalis cervicis . . 366
spinalis dorsi . . . 366
tendinosus . . . 377
Sensation 456
Sense of hearing, or Audition . 459
of smell, or Olfaction . 458
of taste 457
of touch 456
of vision 462
Serratus magnus . . . 359
posticus inferior . . 364
posticus superior . . 364
Silicum 290
Sinuses of the dura mater . 429
Small intestines . . . 390
Sodium 290
Soleus 378
Sphenoid bone . . . 312
Spinalis dorsi 366
Splenius 364
Stearine 288
Sterno-cleido-mastoideus . . 356
hyoideus 357
thyroideus . . . 357
Sternum 306
Stomach 388
Structure of bone . . . 297
Stylo-glossus 357
hyoideus 357
pharyngeus . . 357, 385
Subclavian artery and its divisions 418
Subclavius 359
Sublingual gland . . . 384
Submaxillary 384
Subscapularis 368
Sulphur 290
Superior maxillary bones . 315

Superior radii brevis . page 372
radii longus . . . 371
Supra-renal capsules . . 402
spinatus scapula . . 368
Sutures of the head . . 320
Synovial membrane . . . 339

T.

Temporal bone . . . 311
Temporalis 356
Tensor vagina femoris . . 375
Teres major 368
minor 368
Tho anterior tibial artery . 426
aorta and its branches . 416
arteries 416
bladder 402
brain 440
cerebellum . . . 441
cerebrum 442
external iliac artery . . 425
femoral artery . . . 425
gall bladder . . . 396
heart 413
kidneys 400
liver 393
lungs 408
lymphatics . . . 434
mediastinum . . . 410
medulla oblongata . . 441
pancreas 397
pleura 409
pons varolii . . . 441
popliteal artery . . 426
portal vein . . . 432
posterior tibial . . . 426
primitive, or common iliaes 424
prostate gland . . . 403
spinal marrow . . . 438
spinal nerves . . . 446
spine 299
spleen 397
sympathetic nerve . . 450
thymus gland . . . 410
veins 427
Thigh bone, or Femur . page 331
Thorax 306
Thyro-hyoideus . . . 357
Thyroid gland 407
Tibia 332
Tibialis anticus . . . 378
posticus 380
Tongue 382
Trachea 407
Trachelo-mastoid . . . 366
Transversalis abdominis . . 361
cervicis 366
pedis 381
Trapezium 328
Trapezius 363
Trapezoides 328
Treatise on Anatomy and Physiology 281
Triangularis sterni . . . 359
Triceps extensor cubiti . . 369
Trifacial, or fifth pair of nerves 448

U.

Ulna 326
Unciform bone 328
Unguiform bones . . . 316

V.

Vastus externus . . . 375
internus 375
Vegetable Physiology . . 283
Veins of the abdomen . . 431
of the head and neck . 427
of the lower extremities . 431
of the upper extremities . 430
Vessels 292
Viscus 293
Vital properties of tissues . 295
Vomer 317

Z.

Zygomaticus major . . . 355

ENGLISH BOOKS ON HOMŒOPATHY.

I. BOOKS FOR DOMESTIC PRACTICE.

Dr. C. Hering's Domestic Physician, revised with additions from the author's manuscript of the *Seventh German Edition.* Containing also a Tabular Index of the medicines and the diseases in which they are used. *Fifth American Edition.* 1851. Bound, $2. Published by Rademacher & Sheck, 239 Arch St., Philadelphia.

☞ Dr. *C. Hering's Domestic Physician* is also to be had of the subscribers in *German* (sixth edition), *French* (second edit.), and *Spanish.* (See their respective calalogues.)

☞ From the North American Homœopathic Journal, vol. I, p. 114.

It is only necessary for us to announce the publication of the fifth edition of this deservedly popular domestic manual. The appearance of seven successive editions in Germany, of five in this country, and its recent translation into the French language, are a sufficient testimony to its value. We notice the addition of nearly a hundred pages of new matter, the more full description of some diseases, and the introduction of several which did not appear in the last edition. The part relating to the diseases of women and children, which was then contributed by another hand, is supplied in the present issue by the author himself; a great improvement, as it gives to the work a desirable completeness, which the productions of different individuals can never present.

We are also happy to say, that the paper, printing, and typographical arrangement of the copy before us, are very decided advances upon previous editions; though we beg the respectable publishers not to suppose that they have yet attained the maximum of what is desirable in these respects.

☞ From the North-Westeru Journal of Homœopathy, vol. III, p. 266.

We are indebted to Messrs. Rademacher & Sheck, of Philadelphia, for a copy of the Fifth Edition of Dr. Hering's Domestic Physician. This is an improved and enlarged edition of this highly popular manual, more than one hundred pages having been added. Perhaps no other work of the kind has had so extensive a circulation, six editions having appeared in Germany, (the *seventh* being in print), two in France, one in Spain, and it is now about to be published in Italy and Russia. The favor with which it has been received both by physicians and laymen, renders any commendation from us quite unnecessary.

Dr. Caspari's Homœopathic Domestic Physician, edited by F. Hartmann, M. D., "Author of the Acute and Chronic Diseases." Translated from the eighth German edition, and enriched by a Treatise on Anatomy and Physiology, embellished with 30 illustrat., by W. P. Esrey, M. D. With additions and a preface by C. Hering, M. D. Containing also a Chapter on Mesmerism and Magnetism; directions for patients living some distance from a homœopathic physician, to describe their symptoms; a Tabular Index of the modecines and the diseases in which they are used; and a Sketch of the Biography of Dr. Samuel Hahnemann, the Founder of Homœopathy. 1851. Bound, $1 50. Published by Rademacher & Skeek, 239 Arch St., Philadelphia.

☞ The Treatise on Anatomy and Physiology, with 30 illustrations, by W. P. Esrey, M. D., is also to be had separately at 50 cents.

☞ From the British Journal of Homœopathy, vol. VIII, p. 548.

This is a nice, simply arranged work on domestic homœopathy, written in an easy and comprehensible style, and which, as the announcement "eighth edition" shows, has become extremely popular in Germany, and to our mind it is arranged on a much better principle for popular use than any of those that have yet appeared in this country. It is constructed somewhat on the plan of our old friend Buchan, and whilst on the one hand it avoids the needles prolixity of some of our domestic works, on the other it does not attempt to cure all diseases of ordinary occurrence by means of a dozen or twenty medicines. What chiefly interests us however in this work is a description of our illustrious master given by Dr. Hartmann, one of his earliest disciples, and who had frequent opportunities of seeing and conversing with him.

Laurie, Dr. J., Homœopathic Domestic Medicine, with the Treatment and Diseases of Females, Infants, Children, and Adults. Sixth American edition, much enlarged, with additions by A. Gerald Hull, M. D. 1850. Bound, $1 50.

Hempel's Homœopatic Domestic Physician. 1850. Bound, 50 cents.

Ed. C. Chepmell's Domestic Homœopathy restricted to its legitimate sphere of practice, together with rules for diet and regimen. First American edition, with additions and improvements by Samuel B. Barlow, M. D. 1849. Bound, 50 cents.

Pocket-Homœopathist, and Family Guide. By J. A. Tarbell, M. D. 1849. Bound, 25 cents.

Mariner's Physician and Surgeon; or, a Guide to the Homœopathic Treatment of those diseases to which Seamen are liable. By Geo. W. Cook, M. D. 1848. Bound, 37½ cents.

Laurie's Homœopathic Domestic, by A. Gerald Hull, M. D. Small edition. 1848. Bound, 75 cents.

The Family Guide to the Administration of Homœopathic Remedies. Third edition after the second London edition, with additions. 25 cents.

J. A. Tarbell, M. D. Sources of Health, and the Prevention of Disease. 1850. Bound, 50 cents.

Epps', Dr. J., Domestic Homœopathy; or, Rules for the Domestic Treatment of the Maladies of Infants, Children, and Adults, &c. Fourth American from the fourth London edition. Edited and enlarged by Geo. W. Cook, M. D. 1849. Bound, 75 cents.

A Treatise on the Use of Arnica, in cases of Contusions, Wounds, Sprains, Lacerations of the Solids, Concussions, Paralysis, Rheumatism, Soreness of the Nipples, &c. &c., with a number of cases illustrativo of the use of that drug. By Charles Julius Hempel, M. D. 1845. 19 cents.

II. BOOKS FOR HOMŒOPATHIC PRACTITIONERS.

Diseases of Females and Children. By Walter Williamson, M. D., Professor of Materia medica, &c., in the Homœopathic Medical College at Philadelphia. 1848. Bound, 38 cents. Published by Rademacher & Sheck, 239 Arch St., Philadelphia.

Transactions of the American Institute of Homœopathy. Or Manual of the new Medicines, tried and arranged by Drs. C. Hering, W. Williamson, C. Neidhard, J. Jeanes, S. Dubs, and J. Kitchen. With a Repertory by. W. P. Esrey, M. D. 1846. Bound, $1 50. Published by Rademacher & Sheek, 239 Arch St., Philadelphia.

☞ The medicines treated of in the Transactions are,

Benzoic acid, tried and arranged by J. Jeanes, M. D.
Elaterium, tried and arranged by C. B. Matthews, M. D.
Eupatorium perf., tried and arranged by W. Williamson, M. D.
Fluoric acid, tried and arranged by C. Hering, M. D.
Kalmia latifolia, tried and arranged by C. Hering, M. D.
Lobelia cardinalis, tried by S. Dubs, M. D.
Lobelia inflata, tried and arranged by J. Jeanes, M. D.
Oxalic acid, tried and arranged by C. Neidhard, M. D.
Podophyllum peltatum, tried and arranged by W. Williamson, M. D.
Sanguinaria canadensis, tried by C. Bute, M. D.
Triosteum perfoliatum, tried and arranged by W. Williamson, M. D.

Jahr's New Manual of Homœopathic Practice; edited, with Annotations, by A. Gerald Hull, M. D. From the last Paris edition. This is the fourth American odition of a very celebrated work, written in French by the eminent Homœopathic Professor Jahr, and it is considered the best practical compendium of this extraordinary science that has yet been composed. After a very judicious and instructive introduction, the work

presents a Table of the Homœopathic Medicines, with their names in Latin, English, and German; the order in which they are to be studied, with their most important distinctions, and clinial illustrations of their symptoms and effects upon the various organs and functions of the human system. The second volume embraces an elaborate Analysis of the indications in disease, of the medicines adapted to cure, and a Glossary or the technics used in the work, arranged so luminously as to form an admirable guide to every medical student. The whole system is here displayed with a modesty of pretention, and a scrupulosity in statement, well calculated to bespeak candid investigation. This laborious work is indispensable to the students and practitioners of Homœopathy, and highly interesting to medical scientific men of all classes. 2 vols. 1850. $6.

Jahr's New Manual: originally published under the name of Symptomen-Codex (Digest of Symptoms). This work is intended to facilitate a comparison of the parallel symptoms of the various Homœopathic agents, thereby enabling the practitioner to discover the characteristic symptoms of each drug, and to determine with ease and correctness what remedy is most homœopathic to the existing group of symptoms. Translated, with important and extensive additions from various sources, by Charles Julius Hempel, M. D., assisted by James M. Quin, M. D., with revisions and clinical notes by John F. Gray, M. D.; contributions by Drs. A. Gerald Hull, George W. Cook, and B. F. Joslin of New York; and Drs. C. Hering, J. Jeanes, C. Neidhard, W. Williamson, and J. Kitchen of Philadelphia; with a Preface by C. Hering, M. D. 2 vols. 1848. Bound, $11.

Hempel's Bœnninghausen for Homœopathic Physicians; to be used at the bedside of the patient, and in studying the Materia Medica Pura. 1 octavo vol., most complete edition, including the Concordances of Homœopathic Remedies. Translated and adapted to the use of the American profession, by C. J. Hempel, M. D. 1847. Stitched, $1 50, bound, $2.

Becker, M. D., on Consumption. Transl. from the German. 1848. 38 cts.

———— on Diseases of the Eye. Transl. from the German. 1848. 38 cts.

———— on Constipation. Translated from the German. 1848. 38 cents.

———— on Dentition. Translated from the German. 1848. 38 cents.

———— on Consumption, Diseases of the Eye, Constipation, and Dentition (containing all four above works), bound in one vol., $1.

Hartmann's Acute and Chronic Diseases, and their Homœopathic Treatment. Third German edition, revised and considerably enlarged by the author. Translated, with additions, and adapted to the use of the American profession, by C. J. Hempel, M. D. 4 vols. $5 75.

J. Epp's, M. D., Affections of the Head and the nervous System. $1.

Hartmann, Dr. F., Practical Observations on some of the chief Homœopathic Remedies. Translated from the German by A. H. Okie, M. D. Two series. Bound, $2.

Laurie, Dr. J., Elements of Homœopathic Practice of Physic. An Appendix to Laurie's Domestic, containing also all the Diseases of the *Urinary and Genital Organs.* 1849. Bound, $1 25.

Bryant, Dr. J., A Pocket-Manual, or Repertory of Homœopathic Medicine, alphabetically and nosologically arranged; which may be used as the physician's Vade-Mecum, the traveller's Medical Companion, or the Family Physician: containing the principal remedies for the most important diseases, symptoms, sensations, characteristics of diseases, &c.; with the principal pathogenetic effects of the medicines on the most important organs and functions of the body; together with diagnosis, explanation of technical terms, directions for the selection and exhibition of remedies, rules of diet, &c., &c. Compiled from the best homœopathic authorities. 1851. Bound, $1 25.

B. F. Joslin, M. D., Homœopathic Treatment of Diarrhœa, Dysentery Cholera Morbus, and Cholera, with repertory. Bound, 50 cents.

F. Humphreys, M. D., the Cholera and its Homœopathic Treatment. 1849. Bound, 38 cents.

Jahr's Clinical Guide, or Pocket-Repertory for the Treatment of Acute and Chronic Diseases. Translated from the German, by C. J. Hempel, M. D. 1850. Bound, $1 50.

Hahnemann's Organon of Homœopathic Medicine, third American edit., with improvements, and additions from the last German edition, and Dr. C. Hering's introductory remarks. 1848. Bound, $1.

G. L. Rau's Organon of the Specific Healing Art of Homœopathy, by C. J. Hempel, M. D. Bound, $1 25.

Hahnemann, Dr. S., Materia Medica Pura. Translated by C. J. Hempel, M. D. 4 vols. 1846. Bound, $6.

E. Stapf's Addition to the Materia Medica Pura. Translated by C. J. Hempel, M. D. Bound, $1 50.

Hahnemann, Dr. S., the Chronic Diseases, their Specific Nature, and Homœopathic Treatment. Translated and edited by C. J. Hempel, M. D., with a Preface by C. Hering, M. D., Philadelphia. 8vo. 5 vols. 1849. Bound, $7.

Homœopathic Cookery. Second edition, with additions, by the Lady of an American homœopathic physician. Designed chiefly for the use of such persons as are under homœopathic treatment. Bound, 50 cents.

Rueckert's Therapeutics; or, Successful Homœopathic Cures, collected from the best homœopathic periodicals, translated and edited by C. J. Hempel, M. D. 1 large 8vo vol. 1846. Bound, $3 50.

Bœnninghausen's Essay on the Homœopathic Treatment of Intermittent Fevers. Translated and edited by C. J. Hempel. M. D. 1845. 38 cents.

Homœopathic Treatment of Diseases of the Sexual System, being a complete Repertory of all the symptoms occurring in the Sexual Systems of the Male and Female. Adapted to the use of physicians and laymen. Translated, arranged, and edited, with additions and improvements, by F. Humphreys, M. D. 1850. Bound, 50 cents.

Ruoff's Repertory of Homœopathic Medicine, nosologically arranged. Translated from the German by A. H. Okie, M. D., translator of Hartmann's Remedies. Second American edition, with additions and improvements, by G. Humphrey, M. D. 1845. Bound, $1 50.

Jahr, Dr. G. H. G., Short Elementary Treatise upon Homœopathia, and the Manner of its Practice; with some of the most important effects of ten of the principal homœopathic remedies, for the use of all honest men who desire to convince themselves by experiment of the truth of the doctrine. From the second French edition, corrected and enlarged. Translated by Edward Bayard, M. D. Bound, 37½ cents.

Wm. Henderson, M. D., Homœopathic Practice. 1846. 50 cents.

Forbes, M. D., Homœopathy, Allopathy, and Young Physic. 1846. 19 cts.

Wm. Henderson, M. D. Letter to J. Forbes. 1846. 19 cents.

☞ The above three books bound in one vol., $1.

Joslin, B. F., M. D., Principles of Homœopathia. In a series of lectures. 1850. Bound, 75 cents.

F. A. Guenther's New Manual of Homœopathic Veterinary Medicine; or, the Homœopathic Treatment of the Horse, the Ox, the Sheep, the Dog, and other Domestic Animals. 1847. Bound, $1 25.

E. E. Marcy, M. D., the Homœopathic Theory and Practice of Medicine. 1850. Bound, $2.

Jahr's and **Gruner's** New Homœopathic Pharmacopœia and Posology, or, the Mode of Preparing Homœopathic Medicine, and the Administration of Doses, compiled and translated from the German works of Buchner, Gruner, and the French work of Jahr, by C. J. Hempel, M. D., 1850. Bound, $2.

Jahr's Diseases of the Skin; or, Alphabetical Repertory of the Skin-symptoms and external alterations of substance, together with the morbid phenomena observed in the glandular, osseous, mucous, and circulatory systems, arranged with pathological remarks on the diseases of the skin. Edited by C. J. Hempel, M. D. 1850. Bound, $1.

An Epitome of Homœopathic Practice. Compiled chiefly from Jahr, Rückert, Beauvais, Bönninghausen, &c. By J. T. Curtis, M. D., and J. Lillie, M. D. Second enlarged edition. 1850. Bound, 75 cents.

Dr. C. Hering's Domestic Physician is also to be had, handsomely bound, in the following languages:

IN FRENCH, 2d Edition.

Medecine homœopathique domestique, par le docteur C. Hering (de Philadelphie), rédigée d'après les meilleurs ouvrages homœopathiques et d'après sa propre expérience, avec des additions des docteurs Goullon, Gross et Stapf, traduite de l'allemand et publiée par le docteur L. Marchant. Deuxième édition, corrigée et augmentée. Paris, 1850, 1 vol. in-12 de 500 pages. $2.

Cet ouvrage enseigne la manière de se soulager dans un grand nomber de maladies, soit par des moyens domestiques, soit, lorsque ceux-ci sont insuffisants, par des remèdes homœopathiques qui ne nuisent jamais et sont toujours utiles lorsqu'ils sont convenablement administrés. C'est pour cela que la *médecine homœopathique domestique* s'adresse à tous; d'abord à ceux qui sont convaincus par leur proper expérience des avantages réels des principes Hahnemanniens, et puis à ceux qui n'ont pas eu occasion d'acquérir cette conviction, de même aussi qu'à ceux qui n'ont entendu que mal parler de l'homœopathie.

IN GERMAN. 7th Edition.

Hering, Dr. **Constantin,** der homöopathische Hausarzt. Nach den besten homöopathischen Werken und eignen Erfahrungen bearbeitet; mit den Zusätzen der Doctoren Goullon, Groß und Stapf. 7te vom Verfasser selbst übergearbeitete und vermehrte Auflage. Jena, 1851. Eleg. geb. $1 50.

IN SPANISH.

Medicina homeopatica domestica, ó guia de las familias, para que puedan tratarse por si mismos homeopaticamente en las indisposiciones ligeras y prestar auxilios eficaces a los enfermos en los casos urgentes hasta la llegada del médico, por el doctor C. Hering. Redactado con arreglo á las mejores obrys homeopáticas y á su propia esperienein con adiciones de los doctores Goullon, Gross y Ssapf. Traducida al castellano por D. Roman Fernandez del Rio, doctor en medicina y cirurgia etc. Madrid, 1850. $2 50.

☞ Dr. Hering's Domestic Physician is also in the course of translation into the **Russian & Greek** languages, and will be for sale by the subscribers soon after its publication.

JUST PUBLISHED:

The Lesser Writings of Samuel Hahnemann, collected and translated by R. E. Dudgeon, M. D. With Additions by E. E. Marcy, M. D., Author of "The Homœopathic Theory and Practice of Medicine and Editor of The North American Homœopathic Journal."

A large 8° volume with a beautiful Likeness in steel of Hahnemann. Price in England $6. Republished with Additions, bound, $3.

Rademacher & Sheek,
239 Arch St., Philadelphia.

Dr. Caspari's Homœopathic
Domestic Physician ed. by Dr. F.
Hartman. trans. from 8th German edition
by Dr. W. P. Esrey. 475-pp. 30 illus.
Phila. 1852. 8vo. bds. Good
cond. except- some wear of cover.

60¢